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Taxation Section

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TAXPAYERS CARRYING ON MINING OPERATIONS IN AUSTRALIA

Deduction of Capital Expenditure Under Amending Act of 1947

Section 122 provides for a sinking fund deduction in respect of capital expended on plant and development of a mining property in Australia, other than a coal mine.

Under s. 122 of the 1936-1946 Act, inserted by the Amending Act of 1940, the amount of the deduction was calculated by distributing each particular amount of expenditure proportionately over the estimated life of the mine as at the date of that expenditure.

Example:

The following sums were spent on "necessary plant and development of the mining property" on (for the sake of simplicity) 1st July of each of the undermentioned years, the estimated life of the mine at the date of each particular amount of expenditure being shown in the third column below:

Date of expenditure	Amount of expenditure	Estimated life of mine at date of expenditure	Annual deduction under s. 122 of 1936-1946 Act
1st July: 1942	£26,000	13	£2,000
1943	15,000	12	1,250
1944	12,000	8	1,500
1945	6,000	6	1,000

It will be seen that the original estimate of the life of the mine was 13 years from 1st July, 1942. The estimate at 1st July, 1943, viz., 12 years, was consistent with the original estimate. On 1st July, 1944, the estimated life of the mine was revised, being 8 years instead of 11 years. So also the life of the mine was re-estimated on 1st July, 1945, at 6 years as compared with the original estimate of 10 years and the 1944 revised estimate of 7 years. It is important to note that, whilst a separate estimated life could be made in respect of each particular amount of expenditure, the taxpayer was not authorised to revise any previous estimates. The effect of this is illustrated later.

The allowable deductions under s. 122 for the four years ended 30th June, 1946, were therefore as follows:

Date of expenditure	Amount of expenditure	Deduction under section 122—Year ended 30th June: 1943	1944	1945	1946	Total of allowances to 30th June, 1946	Unrecouped expenditure as at 30th June, 1946
1st July, 1942	£26,000	£2,000	£2,000	£2,000	£2,000	£8,000	£18,000
1943	15,000	Nil	1,250	1,250	1,250	3,750	11,250
1944	12,000	Nil	Nil	1,500	1,500	3,000	9,000
1945	6,000	Nil	Nil	Nil	1,000	1,000	5,000
Total	£59,000	£2,000	£3,250	£4,750	£5,750	£15,750	£43,250

It will be readily seen that, if events proved the revised estimate at 1st July, 1945, to be correct, the taxpayer would not receive a full deduction under s. 122 of the 1936-1946 Act of the total capital expenditure incurred by him. Under the revised estimate, the life of the mine will cease on 30th June, 1951. In that event, the position under s. 122 of the 1936-1946 Act would be as follows:

	Expenditure on 1st July				Total
	1942	1943	1944	1945	
Amount of expenditure	£26,000	£15,000	£12,000	£6,000	£59,000
Allowances under s. 122 of 1936-1946 Act:					
£2,000 × 9	18,000				
£1,250 × 8		10,000			
£1,500 × 7			10,500		
£1,000 × 6				6,000	44,500
Undeductible balance	£8,000	£5,000	£1,500	Nil	£14,500

Another, and much more serious, defect in practice was that the sinking fund deduction under s. 122 might substantially exceed the profits of the mine, particularly in the early years of its development, when profits might be relatively small or possibly non-existent. The resultant loss could, however, be carried forward as a deduction in calculating the taxable income of the next succeeding four years, thus, to some extent, mitigating the failure of s. 122 to provide an effective deduction. Under the Amending Act of 1947, the four-year period has been extended to seven years. Thus, in calculating the taxable income of year ended 30th June, 1947, a deduction will be allowed of any losses incurred in the seven income years ended 30th June, 1940-1946 inclusive, to the extent to which those losses were not allowed as a deduction in any income year prior to year ended 30th June, 1947. Where, however, losses cannot be recouped within the original or revised "carry forward" period, the intention of s. 122 to allow a full and effective deduction from profits in respect of capital expended on plant and development was frustrated.

These defects have been remedied by the Amending Act of 1947, which has repealed s. 122 of the 1936-1946 Act, and has inserted a new section in its stead. As illustrated below, new s. 122 provides that, if the taxpayer so desires, he may be allowed a deduction up to the amount of the net income (i.e., as ascertained before the allowance of the s. 122 deduction) derived by him during the year of income, the whole of the unrecouped balance of the capital expenditure being carried forward and allowed as a deduction against the income of future years. New s. 122 also permits the life of the mine to be estimated each year, the sinking fund deduction in respect of the total unrecouped capital expenditure being recalculated in accordance with that estimate. In addition, the new section is designed to ensure that unrecouped capital expenditure will be allowed as a deduction over the remaining actual life of the mine.

New s. 122 (1) prescribes the conditions under which the section will apply, and the class of expenditure covered. In this respect, it conforms substantially to the previous section, but there are two variations:

Under old s. 122 the allowance applied where a taxpayer "derives income" from carrying on mining operations in Australia, other than coal mining. Under new s. 122 (1) the allowance is granted "where a person .... is carrying on mining operations (other than coal mining) in Australia for the purpose of gaining or producing assessable income." Thus, for the

purposes of s. 77, the provisions of Division 10 (ss. 122-124) no longer apply in calculating a loss sustained by a business of gold mining, the income from which is exempt under s. 23 (o). On the other hand, new s. 122 may have application even though assessable income is not actually derived from the mining operations during the year of income.

Repealed s. 122 provided for a deduction where the taxpayer "expends capital" in necessary plant and development of the mining property. A doubt existed as to the application of the section where a taxpayer expended *income* in plant and development. All doubts have now been removed by the new section, which provides for a deduction where a taxpayer "incurs expenditure of a capital nature" on plant and development.

Section 122 (2) provides, subject to subsequent qualifications intended to ensure the effectiveness of the provision, for the basis of ascertaining the amount of the deduction to be allowed. The deduction for any income year is ascertained by dividing the residual capital expenditure, as defined, at the end of the year of income, by the number of years in the estimated life of the mine as at the end of the year of income. Section 122 (2) defines "the residual capital expenditure" to include—

(a) that part of any expenditure incurred before 1st July, 1946, which would have been allowable as a deduction, in future assessments, under previous s. 122 if that section had not been repealed; and
(b) expenditure which is incurred after 30th June, 1946, and which comes within the new provision.

The sum of these two classes of expenditure is reduced each year by the amount allowed as a deduction under s. 122, and the balance is termed "the residual capital expenditure."

Example:

Reverting to the previous example, it will be seen that the unrecouped capital expenditure on 30th June, 1946, was £43,250. Assume the taxpayer expended the sum of £7,900 on necessary plant and development during income year ended 30th June, 1947. The residual capital expenditure as at the end of income year ended 30th June, 1947, is, therefore:

Section 122 (5) (a)—Unrecouped expenditure prior to 1st July, 1946	£43,250
Section 122 (5) (b)—Expenditure incurred after 30th June, 1946	7,900
The residual capital expenditure is therefore	£51,150

This sum must be divided by the estimated life of the mine "as at the end of the year of income." Taxpayers are entitled to review that estimated life from year to year. Let us assume that the taxpayer again revises his estimate, and that the estimated life of the mine at 30th June, 1947, is three years. Applying s. 122 (2), the divisor is 3, the dividend is £51,150, and the quotient or allowable deduction is £17,050. Section 122 (1) provides that "an amount ascertained in accordance with the provisions of this section (applying s. 122 (2) = £17,050) shall be an allowable deduction." The taxable income of year ended 30th June, 1947, is therefore:

Gross income, say		£60,000
Less:		
General deductible outgoings, say	£24,000	
Section 122 deduction	17,050	
		41,050
Taxable income of year ended 30th June, 1947		£18,950

The effect of applying the formula contained in s. 122 (2) will be more fully appreciated by extending the above example to cover the last three years of the life of the mine.

The residual capital expenditure as at 30th June, 1948, is calculated as follows:

Residual capital expenditure as at 30th June, 1947	£51,150
Deduct allowance for year ended 30th June, 1947	17,050
	£34,100
Add capital expenditure during year ended 30th June, 1948, say	2,250
Residual capital expenditure as at 30th June, 1948	£36,350

Assume that the taxpayer does not revise his previous estimate, so that the estimated life of the mine as at 30th June, 1948, is two years. The deduction under s. 122 (2) is therefore: £36,350 ÷ 2 = £18,175.

Gross income of year ended 30th June, 1948, say		£50,000
Less:		
General deductible outgoings, say	£21,000	
Section 122 deduction, as above	18,175	
		39,175
Taxable income of year ended 30th June, 1948		£10,825

The residual capital expenditure as at 30th June, 1949, is calculated as follows:

Residual capital expenditure as at 30th June, 1948	£36,350
Deduct allowance for year ended 30th June, 1948	18,175
	£18,175
Add capital expenditure during year ended 30th June, 1949, say	450
Residual capital expenditure as at 30th June, 1949	£18,625

Assume again that the taxpayer does not revise his previous estimate, so that the estimated life of the mine as at 30th June, 1949, is one year. The deduction under s. 122 (2) is therefore: £18,625 ÷ 1 = £18,625.

Gross income of year ended 30th June, 1949, say		£38,000
Less:		
General deductible outgoings, say	£14,000	
Section 122 deduction, as above	18,625	
		32,625
Taxable income of year ended 30th June, 1949		£5,375

The final working life of the mine is year ended 30th June, 1950. Let us assume that no further capital expenditure was made during that year. The residual capital expenditure as at 30th June, 1950, is nil, as the balance of the expenditure, £18,625, was allowed as a deduction in the assessment of year ended 30th June, 1949.

Gross income of year ended 30th June, 1950, say		£11,000
Less:		
General deductible outgoings, say	£4,000	
Section 122 deduction	Nil	
		4,000
Taxable income of year ended 30th June, 1950		£7,000

It will be seen that s. 122 (2) is so drafted that the final deduction is allowable in the year before that in which operations are expected to cease. The legislature deliberately arrived at this result on the ground that the allowance of the s. 122 deduction of the full amount expended on plant and development in the years prior to the final income year would be of greater benefit to the taxpayer than the deduction of some amount in the last year of mining operations when, generally speaking, little or no profit is derived from the mine.

An examination of the above example also reveals that s. 122 (2) grants a full year's deduction in respect of capital expenditure incurred in any income year in calculating the taxable income of that year, thus avoiding the apportionment of such expenditure over a portion of the year as was the position under old s. 122. For example, the sum of £450 was spent on development during income year ended 30th June, 1949. The estimated life of the mine as at 30th June, 1949, was one year. Therefore the taxpayer received a deduction of the whole of the sum of £450 in calculating his taxable income of year ended 30th June, 1949.

If any plant is sold by the taxpayer after the cessation of mining operations, he is not required to include the proceeds of sale in his assessable income of the year of sale. The position was the same under repealed s. 122.

Section 122 (3) provides that, unless the taxpayer elects to the contrary, the deduction in any year shall not exceed the amount which remains after deducting from the taxpayer's *total* assessable income of that year all allowable deductions, other than the deductions specially provided for in Division 10, including new s. 123 AA.

Example:

Residual capital expenditure as at 30th June, 1947		£21,000
Estimated life of mine as at 30th June, 1947		14 years
Deduction under s. 122 (2) for year ended 30th June, 1947: £21,000 ÷ 14 = ...		£1,500
Gross income of year ended 30th June, 1947, say		£8,000
Less:		
General deductible outgoings, say	£7,000	
Section 122 (2) deduction, £1,500, limited under s. 122 (3) to	1,000	
		8,000
Taxable income		Nil

But for s. 122 (3) there would have been a loss of £500 which could have been carried forward as a deduction under s. 80 against the seven incomes of years ended 30th June, 1948-1954 inclusive. If, however, the loss cannot be recouped, within the "carry forward" period, the intention of s. 122 to allow a full and effective deduction would be frustrated.

The residual capital expenditure as at 30th June, 1948, would be calculated as follows:

Residual capital expenditure as at 30th June, 1947	£21,000
Deduct allowance under s. 122 (3) for year ended 30th June, 1947	1,000
	£20,000
Add capital expenditure during year ended 30th June, 1948, say	6,000
Residual capital expenditure as at 30th June, 1948	£26,000

It should be observed that s. 122 (3) is automatic in its application unless the taxpayer elects that the subsection shall not apply. The taxpayer is entitled to make the election in respect of one year and is entitled to refrain from electing in respect of another year. This freedom of choice in relation to each income year is designed to ensure that the taxpayer will not fail to obtain the optimum deduction. For example, it may be in the taxpayer's interest to elect that s. 122 (3) shall not apply for say three income years during which there is no income, because of the certainty that, in the fourth year, he will derive a substantial income from the mine against which, by reason of the operation of s. 80, he will be entitled to deduct s. 122 (2) allowances for four years.

Section 122 (4) prescribes the method by which the taxpayer may make an election not to have s. 122 (3) applied. As previously stated, this election will apply only in respect of the year of income in respect of which it is intended to apply. The election to receive the full deduction permitted by s. 122 (2) is to be made in writing, signed by or on behalf of the taxpayer, and delivered to the Commissioner on or before the last day for furnishing the return of income in respect of which it is intended to apply.

Section 122 (6) is discussed in the notes to new s. 123 AA.

New s. 122 will apply for purposes of assessments based on income derived by taxpayers (whether companies or individuals) during year ended 30th June, 1947 (or substituted accounting period) and subsequent years.

Exploration and Prospecting Expenditure

A new section (123AA) has been incorporated in the principal Act by the Amending Act of 1947. Under the new provision a special deduction is granted of expenditure incurred by the taxpayer during the year of income on "exploration or prospecting" (as defined by s. 123AA (4)) on any mining tenures held or held under option. Section 123AA does not apply in respect of expenditure incurred in prospecting for coal; or for gold (because income derived from gold mining is exempt); or for petroleum (because expenditure on prospecting for oil is already the subject of a special concession under s. 123A).

In support of the new provision the Treasurer said that if mining in Australia is to expand or even to continue on its present scale, exploration and prospecting will be necessary in order to discover new deposits. Mining concerns, if they desire to continue mining operations, must therefore necessarily engage in exploration and prospecting. Established mining concerns might therefore fairly regard the cost of exploration and prospecting as a normal business expense. Although the larger scale exploration and prospecting may be undertaken by established mining concerns, s. 123AA extends the concession to all persons carrying on exploration or prospecting.

The deduction provided by s. 123AA is limited to the amount of net income derived by the taxpayer during the year of income from the carrying on of a mining business and from activities directly or indirectly associated with that mining business. Such mining business need not be carried on on a tenure the subject of the exploration or prospecting. (S. 123AA (2).)

In instances where the net income, if any, from mining operations is insufficient to permit of a full deduction (including instances where, in the initial stages, no income is derived from the mining operations) the amount of expenditure not allowed in the year in which it was incurred will be carried forward and treated as expenditure to which new s. 122 will apply

i.e., as expenditure on necessary plant and development of a mining property. If at the time the taxpayer has not a mining property in respect of which s. 122 applies, unrecouped exploration or prospecting expenditure may be allowed as a deduction from future income. In such cases a deduction will be allowable in the first subsequent year in which the taxpayer is entitled to a deduction under s. 122 in respect of capital expenditure incurred on plant and development of a mining property. The unrecouped expenditure will, in effect, be treated as capital expenditure on plant and development of that mining property and will be allowed as a sinking fund deduction spread over the estimated life of that mine. This is so, even though the exploration and prospecting expenditure was carried out in some other area. (S. 123AA (3).)

In s. 123AA "exploration or prospecting" means geological mapping, geophysical surveys, systematic search for mineralised areas, and detailed search by drilling or other means for ore deposits within those areas. The term also embraces the search for ore within or in the vicinity of an ore-body by drives, shafts, cross-cuts, winzes, rises and drilling, not being normal development.

Unlike s. 122, the exploration or prospecting activities referred to in s. 123AA are not specifically restricted to tenures in Australia. It would appear, therefore, that if expenditure were incurred by a taxpayer on unsuccessful exploration or prospecting on a mining tenure situated *outside* Australia or Papua, and that taxpayer also carried on mining operations in Australia, he would be entitled to a deduction of the ex-Australian expenditure from the income derived from the Australian mining property to the extent permitted by s. 123AA (2). Any unrecouped expenditure would be deductible in accordance with s. 123AA (3).

The concession provided by the new s. 123AA applies in assessments based on income derived during income year ended 30th June, 1947 (or substituted accounting period) and subsequent years.

The combined effect of s. 23 (p), s. 122 and s. 123AA in respect of exploration and prospecting expenditure is illustrated by the following examples.

Example 1

A company commences lead mining operations during year ended 30th June, 1947. During that year it incurs expenditure on plant and development amounting to £21,000. The estimated life of the mine at 30th June, 1947, is 14 years. During income year ended 30th June, 1947, the same taxpayer incurred expenditure amounting to £7,200 on exploration or prospecting for arsenic on another tenure.

The gross income for year ended 30th June, 1947, from the first-mentioned area was, say		£17,000
Less:		
General deductible outgoings	£6,000	
Deduction under s. 122 (2)—		
£21,000 ÷ 14	1,500	
Deduction under s. 123AA	7,200	
		14,700
Taxable income		£2,300

Example 2

Assume the same set of facts as in Example 1, except that the gross income amounted to £8,000.

Year ended 30th June, 1947

Gross income for year		£8,000
Less:		
General deductible outgoings	£6,000	
Section 122 deduction as in Example 1	1,500	
Section 123AA deduction, limited to difference between assessable income (£8,000) and all other allowable deductions relating thereto (£7,500)	500	
		8,000
Taxable income		Nil

Year ended 30th June 1948

The residual capital expenditure as at 30th June, 1948, is calculated as follows:

Capital expenditure to 30th June, 1947		£21,000
Capital expenditure during year ended 30th June, 1948		Nil
Deemed expenditure under s. 123AA(3) calculated as under		6,700
Exploration and prospecting expenditure incurred during year ended 30th June, 1947	£7,200	
Allowed in assessment for year ended 30th June, 1947, as above	500	
Deemed under s. 123AA (3)(a) to be incurred during the first subsequent year, i.e., during year ended 30th June, 1948	£6,700	
		£27,700
Less allowance under s. 122 (2) in assessment for year ended 30th June, 1947		1,500
Residual capital expenditure as at 30th June, 1948		£26,200
Estimated life of mine as at 30th June, 1948		13 years
Expenditure on exploration and prospecting during year ended 30th June, 1948		£800
Gross income for year ended 30th June, 1948		£22,000
Less:		
General deductible outgoings	£6,000	
Section 122 deduction— £26,200 ÷ 13	2,015	
Section 123AA deduction	800	
		8,815
Taxable income		£13,185

Example 3

During year ended 30th June, 1949, the company incurred further capital expenditure on its mining property, amounting to £4,000. During the same year it sold for £30,000 its right to mine for arsenic on the second tenure.

Under s. 23 (p) the £30,000 is exempt to the following extent:		
Sum received on sale of rights to mine for arsenic		£30,000
Less deductions allowed under s. 123AA:		
Year ended 30th June, 1947	£500	
Year ended 30th June, 1948	800	
To be included in assessable income of year ended 30th June, 1949		1,300
Balance exempt under s. 23 (p)		£28,700

In the above instance, the exploration or prospecting expenditure incurred during year ended 30th June, 1947, amounted to £7,200, of which £500 was allowed as a deduction under s. 123AA (2). The balance of £6,700 was deemed under s. 123AA (3) to be incurred during year ended 30th June, 1948, and also deemed to be expenditure in respect of which the taxpayer is entitled to a deduction under s. 122. A sinking fund deduction was therefore allowed under s. 122 in respect of that sum for year ended 30th June, 1948, vide Example 2.

Section 122 (6) deals with a case of the above nature. It provides that where any amount of income derived by a taxpayer from the sale, etc., of rights to mine on any mining tenure is exempt from income tax by virtue of s. 23 (p), the amount which would otherwise be the residual capital expenditure for the purposes of s. 122 shall be reduced by—

(a) any excess amount of expenditure in relation to that tenure to which s. 123AA (3) applies (£6,700); or

(b) the amount of the exempt income (£28,700), whichever is the less.

The residual capital expenditure as at 30th June, 1949, is, therefore, calculated as follows:

Residual capital expenditure as at 30th June, 1948, vide Example 2		£26,200
Less:		
Section 122 deduction for year ended 30th June, 1948, vide Example 2	£2,015	
Sum to be deducted in accordance with s. 122 (6) as explained above	6,700	
		8,715
		£17,485
Add capital expenditure during year ended 30th June, 1949, say		3,000
Residual capital expenditure as at 30th June, 1949		£20,485

The estimated life of the mine at 30th June, 1949, would, if the original estimate were accurate, be 12 years and the deduction allowable under s. 122 from the assessable income of year ended 30th June, 1949, would be £20,485 ÷ 12 = £1,707.

Section 123AA (3) (a) refers only to s. 122, and the question arises why s. 123AA (3) should not similarly apply where a deduction is allowed under s. 123. The answer is that if a taxpayer is entitled to a deduction under s. 123 it follows that he has it within his power to become entitled to a deduction under s. 122, because the allowance under s. 123 is an alternative to that granted by s. 122. It is understood that s. 123AA (3) will be so interpreted officially that if a taxpayer chooses to claim a deduction under s. 123, instead of claiming a deduction under s. 122, he will, nevertheless, for the purposes of s. 123AA (3), be treated as though "he is (apart from this section) entitled to a deduction under s. 122" in respect of the excess exploration or prospecting expenditure.

Metals and Minerals Prescribed for Purposes of S. 23 (p)

New paragraph (p) inserted in s. 23 by the Amending Act of 1947 in lieu of the old paragraph exempts income derived by a bona fide prospector from the sale of rights to mine not only for gold but also for any metal or mineral prescribed in the Income Tax Regulations. The new provision was discussed in the June issue of the journal at pp. 212-215. Regulation 4AA inserted in the Income Tax Regulations by Statutory Rules 1947 No. 77 specifies the following as metals and minerals in respect of which s. 23 (p) shall apply, namely:

Antimony, arsenic, beryllium, bismuth, cobalt, copper, mercury, molybdenum, nickel, tin and vanadium.

The exemption provided by s. 23 (p) applies in respect of income derived by companies and individuals during year ended 30th June, 1947 (or substituted accounting period) and subsequent years.

Calls Paid to Prospecting Companies and Syndicates

Section 160AA provides for the allowance of a rebate in respect of calls paid to certain companies and syndicates. By the Amending Act of 1947, s. 160AA has been expanded in order to include calls paid on shares in *prospecting* companies and syndicates, i.e., in addition to the existing provision in respect of calls on shares in mining companies and syndicates.

It was officially explained that the Government considered that it was desirable to encourage the expansion of the mining industry. As prospecting is essential to this expansion, it was decided to amend s. 160AA by granting a rebate in respect of calls paid to companies or syndicates carrying on prospecting operations in Australia for gold, silver, base metals, rare minerals or oil.

The above amendment applies to income year ended 30th June, 1947, and all subsequent years.

Sale of Partnership Assets Including Book Debts

Owing to an incomplete report of the decision in 11 C.T.B.R. Cas. 91, the note which appeared on the above subject at p. 56 of the February-March, 1947, issue of the journal is incorrect so far as it relates to the vendor's liability in connection with the sale of his interest in the book debts of the old partnership to members of the new partnership. When the Board stated that "the Commissioner, we naturally believe, has not treated these capitalised earnings of the vendor as income derived by him," the members were apparently referring to the vendor's position in relation to the *new* partnership. However, the Board clearly indicated that the total amount of the book debts, £8,353, acquired by the new partnership from the old partnership formed part of the assessable income of the *old* partnership of the year in which that partnership was terminated. After discussing the implications of Carden's case (*Commr. of Taxes (S.A.) v. Executor Trustee and Agency Co. of S.A. Ltd.*, 63 C.L.R. 108; 5 A.T.D. 98, 1 A.I.T.R. 302), the Board said: "In our opinion, however, the application of the limited rule in Carden's case is extended in this case by the application of section 19. We have no doubt that the earned but uncollected income represented by the book debts of the old partnership at the end of 1939 was 'capitalised' within the meaning of the section. That, we think, is sufficiently established by the fact that the book debts representing the earnings of the old partnership formed part of the capital of the new partnership. The persons (other than 'B') who had any interest in the assets of the old partnership received the benefit in capitalised form of their shares in the uncollected earnings represented by the book debts of that partnership by the inclusion of their interests in those book debts in the surplus assets representing their capital accounts in the new partner-

ship. 'B' received the benefit, in capitalised form, of his share in those uncollected earnings in the price which he received for the sale of his interest in the assets of the old partnership. Although these persons did not receive the earned income (represented by the book debts) as income, they received the benefit of it by the addition of an equivalent value to their capital resources. It is reasonably clear that with or without the assistance of the rule in Carden's case the application of the provisions of section 19 would result in the amount of £8,353 (the book debts in question) being treated as assessable income of the old partnership."

The above extract from the Board's decision, which has recently been supplied to the writer, does not appear in the report of the case in 11 C.T.B.R.

Companies Not Carried On For Profit Of Individual Members

Exemption from Tax on Undistributed Income

Part IIIA imposes a further tax on the undistributed income of non-private companies, the rate of tax being 2s. in £. Section 6 provides that a company shall include all bodies or associations, corporate or unincorporate. The further tax is therefore payable by various bodies such as community hotels, associations, clubs, lodges and other organisations which are not carried on for the profit or gain of their individual members and which, by their constitution, are prohibited from distributing their profits among members. It was officially stated that the Government considered it to be inappropriate to impose tax under Part IIIA on the undistributed incomes of community hotels, associations and like bodies which are unable to distribute profits, as these bodies differ substantially from ordinary public companies carried on for the purposes of profit to their individual members. Section 160E has, accordingly, been amended by the Amending Act of 1947, to exempt from the further tax under Part IIIA a company which is not carried on for the purposes of profit or gain to its individual members and which, by the terms of its constitution, is prohibited from making any distribution, whether in money, property or otherwise, to its members.

The above amendment first applies for purposes of the ascertainment of the undistributed income of year of income ended 30th June, 1947, or substituted accounting period.

Remuneration of Directors

When Amount Determined by Independent Controlling Body of Shareholders

The taxpayer, a private company, is an Australian subsidiary of an English company. The board of the taxpayer company consisted of A, B and C (all constantly engaged in the company's business) and D, an accountant, who, without remuneration, represented the English company. The Commissioner applied s. 109 in respect of the remuneration paid to A, B, and C. The particulars for the relevant year were as follows:

	Claimed by Company			Allowed by Commissioner	Disallowed and treated as dividend
	Salary	Bonus	Total		
A	£2,000	£2,896	£4,896	£2,500	£2,396
B	750	2,000	2,750	875	1,875
C	1,200	2,000	3,200	1,350	1,850
	£3,950	£6,896	£10,846	£4,725	£6,121

The sum allowed by the Commissioner, £4,725, represented the total of the salaries and bonuses which were paid to A, B, and C in the previous income year, and which were allowed in full by the Commissioner.

The capital of the taxpayer company was held in the following proportions:

	Subscribed Capital	Voting Power
English Company	79 per cent.	77 per cent.
A, B, and C	21 „ „	23 „ „
	100	100

Prior to the relevant year, the working directors of the taxpayer company had expressed their dissatisfaction with the remuneration allowed to them by the English company in the exercise of its controlling power. B, in particular, had made many representations to the managing director of the English company, some of his letters being "marked with unusual candour and vehemence." Finally, after the matter had been under discussion for about four years, D cabled the English company, which he represented, recommending that A, B, and C be paid their present salaries, together with 25 per cent. of net profits, before providing for taxation, "thereby ensuring automatic and fair adjustment of remuneration in less or more successful years," the bonus to be divided, each year, amongst A, B, and C, according to their mutual arrangement. The English company adopted this recommendation. Accordingly the bonus, £6,896, which represented 25 per cent. of the net profits of the relevant year, was allocated as above.

The Board of Review, not yet reported, upheld the taxpayer company's claim to a deduction of the full sum of £10,846 paid by it to its directors. The following is an extract from the Board's decision:

> "As the Board has pointed out on many occasions, the question of what is reasonable remuneration must primarily depend on the value (to the company concerned) of the services rendered. In arriving at an opinion on this matter for the purposes of s. 109, considerable difficulty is sometimes experienced because directors are not infrequently the largest shareholders. But where, as in this case, the value of the directors' services is determined by an independent controlling body of shareholders residing abroad, it would require strong evidence to convince us that they were not the best judges of what should be paid, and we should find it exceedingly hard to believe that they agreed to pay more than they thought the services were worth."

And see 10 C.T.B.R. Cas. 93, where (a) the managing director, as a condition of his appointment, insisted on payment of an annual salary of £2,000 and one-fourth share of the net profits, and (b) the chairman similarly demanded an annual retainer of £350, plus 10 per cent. of the profits. The two directors were not able to assert these claims by virtue of shareholding interests or for other reasons. They and the shareholders were at arm's length, and their claims were granted only because the shareholders felt that it was desirable, if not essential, to secure their expert services. The Board of Review, in that case, allowed the full amount paid to these two directors.

Services Rendered in Discharge of Governmental Functions

Remuneration (other than pensions) paid by the Commonwealth or a State to any individual for services rendered in the discharge of governmental functions is exempt from United Kingdom tax if the individual is not ordinarily resident in the United Kingdom or is resident there solely for the purpose of rendering those services (Article VIII (1)). N.B.: Pensions are assessed on a residence basis (Article X). It was officially stated that if Article VIII (1) does not apply, the United Kingdom will tax the remuneration and Australia will exempt it.

There is a corresponding provision exempting from Australian tax remuneration paid by the United Kingdom to an individual who is not a resident of Australia or is resident in Australia solely for the purpose of rendering services to the United Kingdom Government (Article VIII (2)). Where Article VIII (2) does not apply, the United Kingdom will exempt the remuneration and Australia will tax it.

Article VIII does not apply to payments in respect of services rendered in connection with any trade or business carried on by either the United Kingdom Government or by the Government of the Commonwealth or a State (Article VIII (3)).

Remuneration Earned During Visit by United Kingdom Resident to Australia

An individual, who is a United Kingdom resident, is exempt from Commonwealth tax on remuneration or other income in respect of personal (including professional) services performed in Australia in any year of income if (a) he is present in Australia for a period or periods not exceeding in the aggregate 183 days in that year, (b) the services in Australia are performed for or on behalf of a United Kingdom resident, and (c) the remuneration or other income is subject to United Kingdom tax (Article IX (1)).

Subject to the wider exemption contained in s. 23 (c) (vii), if the visit extends beyond 183 days in the year of income, Australia will tax the remuneration earned during the whole period of the visit. If the United Kingdom also taxes the remuneration, it will allow a credit of the Australian tax against the United Kingdom tax. Section 23 (c) (vii) provides for an exemption of the remuneration earned by executive officers of overseas business concerns, consultants, technicians and operatives visiting Australia for a period up to two years. Article IX of the Agreement does not detract from the wider exemption provided by s. 23 (c) (vii) and will cover cases which do not come within the terms of that sub-paragraph.

Article IX does not apply to the remuneration of a visiting public entertainer, *post*.

Remuneration Earned During Visit by Australian Resident to United Kingdom

An individual, who is an Australian resident, is exempt from United Kingdom tax on profits or remuneration in respect of personal (including professional) services performed in the United Kingdom in any year of assessment if (a) he is present in the United Kingdom for a period or periods not exceeding in the aggregate 183 days during that year, (b) the services are performed for or on behalf of an Australian resident, and (c) the profits or remuneration are subject to Australian tax.

If the visit to the United Kingdom should extend beyond 183 days in the year of assessment, the United Kingdom will tax the remuneration for the full period. N.B.: The United Kingdom year of assessment ends on 5th April. Where tax is so levied by the United Kingdom, the income is exempt from Commonwealth income tax (s. 23 (q)).

Visiting Entertainers

Article IX (3) provides that the provisions of Article XI do not apply to the profits, remuneration or other income of public entertainers such as stage, motion picture or radio artists, musicians and athletes. Thus, the Australian earnings of United Kingdom public entertainers touring Australia are subject to Australian tax, but if the United Kingdom also taxes the earnings it will give credit for the Australian tax paid thereon. The United Kingdom earnings of Australian public entertainers touring the United Kingdom are subject to United Kingdom tax. Such earnings will be exempt from Commonwealth income tax (s. 23 (q)).

Differential Costs—As an Aid to Management

(The third Annual Commonwealth Institute of Accountants Research Lecture delivered in the University of Adelaide, October 22, 1946, and the seventh Annual Research Lecture in the University of Melbourne, October 24, 1946)

By WALTER D. SCOTT, F.I.C.A.

1. INTRODUCTORY

I feel signally honoured this evening in having been asked to deliver this the third Annual Commonwealth Institute of Accountants Research Lecture. I have had the privilege and pleasure of reading the two previous lectures given, and, with others, have been impressed by the standard and quality of those addresses. I hope that in this lecture I may emulate the two previous lectures in contributing something which may prove to be food for thought and consideration.

In thinking over a subject for this evening's lecture I was guided towards a consideration of Differential Costs—As an Aid to Management by the following factors:

Firstly, as far as I have been able to judge there is little as yet written upon this subject. It is true that there is some consideration of the matter in *The Economics of Overhead Cost* by Clark, and there is an odd chapter in one or two text-books, Furthermore, the National Association of Cost Accountants has from time to time devoted some thought to the matter, and references have therefore appeared in their bulletins and Year Books. In addition, it has been mentioned at times in the *Cost Accountant* and in the *Accounting Review.* I have not yet seen, however, any treatise on the subject designed to analyse all the factors involved in its meaning and its use.

Secondly, there appears to be a great deal of confusion of thought concerning this subject, even in the references mentioned. As will be seen later, the text-book definitions (where one is given) lay stress purely upon the Differential Cost of extra or less production. Clark (*The Incidence of Overhead Cost*) deals with the matter largely from an economic standpoint, though he gives a very good practical illustration to support his conclusions. Furthermore, he goes to some pains to suggest that Differential Costs may be a better approach towards assisting management with its problems than Cost Accounting itself. It is rather interesting to note that a variant of this conclusion, if not shared, is at least supported in an article by R. S. Edwards on "The Rationale of Cost Accounting" (*Modern Business Problems,* published in 1937). I hope, therefore, tonight to analyse some of the reasons for this confusion of thought.

Thirdly, it seemed to me that the full scope of Differential Costs has still to be discovered, and if the accountancy profession generally is interested in the development of this important section of its work, there is much still to be done.

Fourthly, even a cursory examination of the subject seems to suggest that management can obtain a great deal of assistance from the use of Differential Costs, and if accountancy generally is seeking ways and means of giving more assistance to management there is here a promising opportunity which should not be overlooked.

For these reasons, therefore, it appeared to me that the subject of Differential Costs is one which could well become a topic for examination in a research lecture of this kind. I have added the words "As an Aid to Management" because cost accounting in itself, if it is to fulfil its major

function—perhaps in the last analysis its only function—should assist management, should become a tool of management. Differential Costs should therefore come within this category.

2. DEFINITIONS

One of the difficulties in quoting definitions or in trying to define in accountancy generally (and particularly in cost accounting) is that terminology is still in an embryo stage.

Clark in *The Incidence of Overhead Cost* (page 49), for example, defines Differential Cost in the following manner:

> "When a decision has to be made involving an increase or decrease of N units of output, the difference in cost between the two policies may be considered to be the cost really incurred on account of these N units of business or of any similar N units. This may be called the Differential Cost of a given amount of business. It represents the cost that must be incurred if that business is taken and which need not be incurred if that business is not taken."

Whilst Clark elaborates this further, gives a practical example of what he means to convey, and refers in a number of places in his book to the subject of Differential Costs, the central theme as far as their utility is concerned seems to lie in differences in cost due to changed outlook.

In fairness to him, however, we must add that Clark is the first to admit that existing terminology is wholly unsatisfactory.

"We may start," he says, "with the general proposition that the terminology of costs is in a state of much confusion, and that it is impossible to solve this confusion by discovering and adopting the one correct usage, because there is no one correct usage, usage being governed by the varying needs of varying business situations and problems. 'Constant and Variable Costs' appear to mean different things for different purposes. This type of conclusion, beautiful as it may be in its tolerance, is nevertheless by itself formless and negative. The best way to give it positive meaning is to work through a series of concrete situations and show in each case what cost means and why." (Page 175.)

Clark then proceeds to outline a number of uses for Differential Costs, virtually all of which range round alterations to production. That was written in 1923.

I hope to carry out Clark's prescription, and indicate later (on slides) the ways in which Differential Costs may be used and applied.

Dohr, Inghram and Love attempt nothing more than a simple definition of the subject, which reads:

> "*Differential Cost.* The additional cost involved in producing an additional unit of product. This cost is usually lower than the unit cost because the fixed or capacity costs have been incurred and are not increased by further production." (Page 733.)

Here again there is the lone emphasis upon production.

Van Sickle in *Cost Accounting* devotes a chapter to the subject and defines it as follows:

> "Differential Costs are the costs that arise from the production of additional increments of output, which costs do not arise if the additional increments are not produced." (Page 525.)

Schlatter in *Advanced Cost Accounting* defines Differential Costs as "the increase in total cost resulting from an increase in volume of production." (Page 84.)

In February and March, 1940, some correspondence appeared in the English journal, *The Accountant*, in which a subscriber maintained that—

"The terms 'differential cost' and 'differential costing' have been used fairly often recently, but I have been unable to find them in any accounting dictionary or among the definitions published by the Institute of Cost and Works Accountants . . . ."

He then took the Accounting Research Association to task for criticising his interpretation of Differential Costs. They maintained that as he applied it, the term was somewhat misleading.

In a reply to this letter, an official of the Accounting Research Association said:

"The reader should be warned that Mr. Blacklock is using the term 'Differential Costing' in a sense very different from its ordinary meaning."

Finally the correspondence closed on this note:

"This exchange of letters will probably lead the Research Association to investigate the significance of differential costing which Mr. Edwards described as 'the crux of accounting.' A definition could then be included in future editions of dictionaries for accountants." (*The Accountant*, Feb.-March, 1940, pp. 176-7, 214, 236.)

Incidentally, Ryall's Dictionary of Costing contains no reference to Differential Cost.

All of the illustrations given above place the whole emphasis upon the variations in cost due to alterations in production, though Van Sickle does proceed to set up a statement which shows the net profit from such variations. This necessarily takes into account differences in selling and administration expenses.

There have been references from time to time in the National Association of Cost Accountant Bulletins. In that of 15th November, 1945, pages 227-231, for example, ("Post-War Pricing and Cost Accounting," by Harry E. Howell) reference is made to the problem of the allocation of charges in Cost Accounting.

"If Cost Accounting is to aid in the solution of these problems, there must be added to the budgets a second contribution in the form of a Differential Cost Statement. This statement represents the additional costs that must be incurred if the business is taken and which need not be incurred if that business is not taken. From these Differential Cost studies, a 'Profit or Loss Statement for the Alternative' may be prepared. Such a statement shows the income and the cost resulting from taking a particular piece of business compared with the income and cost from foregoing it. The difference enables management to determine the net result of taking or rejecting the alternative, and providing the foundation for a sound decision. The difference between this Differential Cost and the Historical Unit Cost may be amazingly great, particularly in businesses requiring plant facilities and large stand-by organisation. Many decisions to curtail operations and lay off workers might be avoided if the Differential Costs and the Differential Profit or Loss were known, after the effect of discriminatory competitive retaliation, and even permanent reduction of prices, is taken into consideration."

It seems to me that this conception comes closer to the heart of the matter, but in general terms only. At least there is no intent to circumscribe Differential Costs, confining them to a particular sphere of activity.

How, then, should we define Differential Costs? It is necessary to note again the inadequacy of words, but because the exact sphere of this subject has yet to be found, it seems to me that there are two factors to be borne in mind—firstly, the simpler the definition at this stage the better, and, secondly, that we should attempt to define the idea rather than any particular aspect.

If we accept the view that the major function of Cost Accounting is the preparation of data to assist management, and if we acknowledge that Differential Costs are part of cost accounting, we must interpret Differential Costs in relation to the assistance which they give to management. There is, however, obviously a particular aspect associated with this method. The very word "Differential" suggests differences, and it is surely not imagination to say, therefore, that it is a type of cost which is designed to show differences. If there are to be differences, there must be two or more alternatives under which the differences become evident. It would appear, therefore, that a logical definition of Differential Costs may be costs which set forth differences in price or income resulting from alternative policies.

Admittedly this definition is broad, and it may be felt that it more than covers the subject. On the other hand, it is contended that the definition must be broad because the subject itself is broad. It is not intended to limit the application of Differential Costs to the results of alternative volumes of production. Nor is it intended that Differential Costs should decided only whether an increase or reduction in price is justified. The vision must be much wider. Differential Costs, just as much as the wider and embracing subject of Cost Accounting, must give to management generally — and this includes the lesser forms of management — all the assistance that can be obtained from its practice. It is true that the majority of Differential Cost Statements will return in the final analysis to the difference in profit resulting from the two alternative policies, but this is only because in the final analysis management itself is most concerned with profit. (This does not overlook, but rather includes, the humane aspects of management, affecting its employees, their welfare and morale.)

3. Types of Differential Cost Statements

If this be accepted as a definition, at least as a starting point, it admittedly requires some amplification, and this can probably be best studied from two aspects — firstly, the types of Differential Cost Statements, and, secondly, their scope. In both these cases it is possible to indicate only— one cannot hope to exhaust the field.

It may be gathered from the foregoing—and this may be the main subject for criticism—that the Differential Cost Statement is merely a comparative statement. That is quite true, but because of the implications involved, because of the importance of the conclusions that may be reached, because of the decisions that may be based upon their findings, the bald term "Comparative Statements" does not express the true potentialities.

Let us try, then, to nominate some of the types of Differential Costs which may be used to give this assistance to management.

Firstly, there is the Arithmetical Comparison

This is much more an ordinary comparison between two distinct policies than any of the other methods to be suggested. It can be used to examine two alternative policies, usually calling for a simple decision based upon the arithmetical answer. It must not be interpreted that there is no more than arithmetic involved, but the method of arriving at the result is usually straightforward. Furthermore, with this method, there is generally a fairly clear-cut estimate of what is involved. Two or three illustrations will probably best explain this type.

Decisions must be made every day by management as to whether a machine should be scrapped and another installed. Alternatively there may be two machines available, each of different capacity. The problem is

to decide which of these machines should be purchased. Here is an example.

In an industrial organisation the present equipment consists of two machines, each five years old, the original life being estimated as ten years. The first cost was £1,000 each, the present book value is £500 each, and the present second-hand value is £300 each. The plant has no other use for this equipment. Upkeep or maintenance is estimated at £100 per year per machine, power and supplies at £150 per year per machine and the cost of space allotted to each machine is worth £100 per year. For the same period the cost of material is £1,500 for the two machines, and will not be changed if a suggested replacement is made. Each machine requires one operator at 4/- per hour, and works 2,400 hours per year. Indirect labour is estimated at £100 per machine per year, and will not be reduced in any way if the replacement is made. The proposed equipment consists of one machine, the first cost of which is £2,500 installed and ready to operate, with an estimated life of ten years. It will not be purchased, however, unless it will show savings sufficient to pay for itself in three years or less. Upkeep or maintenance is estimated at £100 per year, power and supplies at £200 per year, and the cost of space allotted to the machine at £150 per year. The space that can be saved, if the replacement is made, can be used productively to increase departmental output. The machine will work 2,100 hours per year at a Direct Labour Cost of 2/- per hour, in producing the required output, and will be idle the balance of the time that the shop is operating.

According to the original estimate of a ten-year life the present machines still have a life of five years, but as the new machine must pay for itself within three years, a depreciation rate of 33⅓% is to be used in figuring the fixed charges for present and proposed machines. The allowance for Interest on Invested Capital is to be calculated at an average of 4%, and Rates, Taxes, Insurance, etc., at an average of 2⅔%.

The foregoing problem can be resolved and management can be advised as to whether it is an economic proposition to make the change by the use of a Differential Cost Statement which merely sets down the cost of the two alternatives. The solution of this problem will be referred to later and shown on the screen during the evening.

It is true that management may prefer to arrive at a conclusion irrespective of the arithmetical result, but if so it will be for one of two reasons—firstly, because there are other factors—such as financial or quality factors—which may make it a business proposition either to make the change or not to do so, that outweigh the economic result arrived at. If, for example, the new equipment costing £2,500 was beyond the resources of perhaps a small company, the financial consideration may loom largest in management's mind. The second reason may well be that management has never been educated into the use of these statements by the cost accountant, or the cost accountant himself has never tried to prepare one.

In the case at issue, it would be possible to indicate to management, firstly, what saving would result from the more economical of the two alternatives, which is the better and how much more advisable it would be for management to adopt the more profitable course. In this example the results show the cost of the present equipment to the company is £3,600 per year, whilst the cost of the proposed equipment is £3,360 per year. Management could therefore be advised that, on the basis of these estimates, the proposed machine would not only pay for itself in three years, but in addition will earn 12·63% per year on the additional investment of £1,900, plus simple interest at 4% on the average additional investment during that period.

A similar kind of treatment can be given to a problem of material handling. The handling of miscellaneous materials around a factory was formerly done by four men each receiving £1 per day, and, allowing 300 days' operation, the annual direct cost was £1,200. This work can now be done by one man operating an industrial truck with a direct labour cost of £400 per year, thus effecting a saving of £800 per year in direct labour cost. It has been estimated that through greater promptness in moving materials and more continuous operation of machines there is an increase in earnings, due to increased production, of £300 per year, and also that the labour involved, being accounted for as non-productive, carries a fixed charge or burden of 10%. In actual practice the plant operates 240 days per year, or 80% of the time. The other factors which must be taken into account are the percentage allowance on investment, 6%, insurance, taxes, etc., 4%, upkeep, 20%, depreciation and obsolescence, 25%, yearly cost of power, supplies, etc., £150.

There are two questions which may be asked—firstly, how much can the organisation afford to spend on equipment to make it an economical proposition to buy (that is, what price must not be exceeded?), and, secondly, if the truck actually costs £1,000, would it be a profitable investment to buy and how profitable? Here again the answer to this problem will be thrown on the screen later, but it can be indicated at this stage that the equipment must not cost more than £1,498 to be an economical proposition. Any equipment at this figure or under will earn some profit above interest on investment and maintenance. If the truck actually cost £1,000, the profit on the operation of the mechanical equipment would be £274 per year. This would be in addition to the interest on investment and the maintenance.

In these methods or forms of Differential Cost Statements, it is difficult to draw a line exactly between each method. In giving a third example, therefore, it is admitted that, under different circumstances, this type of statement may come somewhat in another method later described.

Wide awake management may be concerned with the cost of handling orders, and may ask for an inquiry. In any case the cost accountant may well find this a very fruitful field for investigation, as considerable savings can often be made through a campaign to increase the size of orders. The high cost of the small order is often overlooked, but it can have a very serious effect upon marketing expenses. Some time ago in a particular concern an investigation was held to ascertain the relative expenses of two orders—one five times as great as the other. It was found that cost of recording the small order was 80% of that of the large order, the cost of invoicing 82%, the cost of granting credit 97%, the cost of collecting the account 101%, the cost of packing 54%, the cost of trucking 52%, and the cost of shipping 56% of the large order. If the large order was £20, the small order would be £4, and if the cost in connection with the large order of each of the items mentioned was 2/6, it would be found that the total cost on the £20 order would be 17/6, which would be 4·375%, whilst for five small orders—again totalling £20—the cost would be £3/3/10, which would mean 16·45%.

There are other facts which come within a similar category, as for example what are the direct selling expenses divided into groups of annual sales, what are the comparative ratios of selling expense to sales territories.

Secondly, there is the Graphic Differential Cost Statement

The Profitgraph is the best example of this type. It sets forth the vital statistics of a business in total form. A Profitgraph will be shown on the screen later, but it can be indicated at this stage that it sets forth the profit

or loss which can be expected in the business at any volume of turnover. There is a great deal of other information also available, but all of it is designed to arrive at that conclusion. Thus it shows the amount of fixed expense, the amount of variable expense at any turnover, the amount of sales necessary for the organisation to break-even, the volume of turnover necessary to pay dividends, to provide for reserves, and to do a number of other things which management may wish to carry out. Obviously, this form of statement must surely fit in with our definition of Differential Cost, because the difference in profit or in loss is shown between any two turnover figures. The statement or its derivatives, however, goes a great deal further, because a variation of the data and the form may well indicate all kinds of information of the utmost value to management, such as what profit can be expected at any nominated sales volume, as for example budgeted sales, the required sales for a desired profit, the effect of a reduction in sales price, and what extra sales are necessary to keep profits stable, the effect of an increase in capacity and the results which can be expected from a combination of changes. Examples of these will be given later.

A similar type of statement coming within this category is the Knoeppel Capitalgraph, which is designed to link up the profit, sales and capital aspects of an organisation.

There seems little doubt that this type of graph is a Differential Cost Statement, capable of being expanded in its use, carrying potentialities for advice to management at present hardly touched in many organisations. Obviously the weakness of this class of statement lies in the fact that it must be prepared on the basis of certain assumptions—that costs will remain as anticipated. Assumptions, however, are not new to any business. When goods are manufactured it is assumed that in the main at least they will be sold; when plant is purchased, it is assumed that it will turn out products within a certain cost range. Business is full of assumptions, full of budgets, written or implied. This form of Differential Cost Statement, therefore, is hazardous, but no more so than many other instruments of policy. It has, however, one great advantage—that it can be used not only as an indicator, but as a compass and a beacon.

This method of preparing Differential Cost does, however, depend for its validity upon a close investigation of, and an exact appreciation of, the nature and interplay of various types of expense.

The behaviour of fixed expense (is it always fixed?), the types of expense which are not fixed—the variable, semi-variable, fixed-variable—all must be examined, their character defined. The thoroughness with which the examination is made determines the validity of the answer. The care exercised in the assumptions from which the conclusion is drawn determines their value to management.

Thirdly, there is the Flexible Budget and Similar Statements

It is possible to prepare Profitgraphs which simply set forth in graphic form the figures contained in a Flexible Budget, and to that extent there may be some overlapping. On the other hand, most figures can be reduced to graphs and this factor does not obviate the third method. The most common type of Flexible Budget sets forth the vital statistics of a business in the form of a Net Profit or Gross Profit Statement based either on varying sales figures, on units of production (assuming sales and production in line) or on varying percentages of production capacity. Within this field, its function is largely the same as the Profitgraph, but the Flexible Budget, in its final form, is built up from a long series of costs, which can cover every aspect of the business. It may use, for example, a

multiple budget method in fixing the departmental factory expense allowable at any range of production. By a formula it may employ a method of deciding upon the amount of fixed expense of a function, and the degree of variability in the expense other than fixed.

4. The Application of Differential Costs

These, then, are the means of Differential Costs, but the preparation of any statement is justified only in the amount of assistance which it can give—possibly ultimately—to management. I suggest, therefore, that we should examine the executive functions of the business to ascertain what problems each has to consider that can be affected and assisted through a consideration of the type of statement we have been discussing.

The Board of Directors

The Board of Directors is concerned with overall policy, and is therefore interested only in those factors which will enable it to make high policy decisions. Where such statements are prepared, a budget sets forth the expected profit for the coming period. As this is common with industry, I shall pass quickly over this aspect and the information which can be derived from it. Suffice it to say that some of the factors already mentioned in connection with the Profitgraph are of extreme importance to a Board of Directors. What turnover must be procured to give a desired profit, what is likely to be the overall effect of price reductions? But an analysis of these methods can take the Board much further, if it desires to go. It can indicate certain economic characteristics of the business, and this information in difficult times may be the difference between prosperity and liquidation. For example, it is becoming increasingly recognised that businesses generally fall into certain economic groups. Where a business has a low ratio of fixed expense and a high variable rate, the marginal income ratio is termed low. Without going into any lengthy explanation it can be indicated that with low marginal income ratios, large changes in volume are required to produce any considerable profit or loss. If large increases in volume are attained, particularly at a rate greater than the marginal income rate, a business quickly and almost automatically gets into difficulties if it is operating with limited working capital, unless special precautions are adopted. Where the fixed expense is high and variable ratio low, the marginal income is termed high. Once a break-even point is reached, even small increases in volume produce large profits, an easy cash position, and easier conditions. However, if the volume is not kept under control, equally large losses can be experienced when the volume falls below break-even point, and the business could go into liquidation in record time.

Managing Director or General Manager

By far the one most likely to gain maximum advantage from Differential Cost Statements is the chief executive, be he Managing Director or General Manager. There is open to him a great amount of assistance in all the phases of the business which come under his control. Here are representative problems with which he may have to deal:

What will be the effect upon profit of a price reduction?

If I can increase my sales, what extra profit can I expect?

If I reduce my prices, how much extra turnover must I get to keep my profit steady?

If I had to double my profit, (a) by what amount would I have to decrease my fixed expense, or (b) by what percentage must I reduce my variable expense, or (c) by what amount must I increase my turnover, or (d) by what amount must I increase my prices?

If I have to meet competition, what can I afford to cut a price by without making a loss?

I am asked to accept a new large order at a cut price. Can I afford to do it?

I have unused capacity in my factory, but my local market is fully satisfied. At what price can I sell overseas to make a stipulated margin of profit (or to break-even) for a certain volume of export? Will it pay me to dump products overseas?

What effect upon profit would it have if I opened a country branch? Will it pay me to shut down portion of the factory? I am at present turning out 1000 units. What would an additional 200 units cost?

These are problems best covered by Differential Cost Statements.

Management today is beset on every side with major problems. The difficulties that arise in connection with machines, with materials and with manpower are much more than sufficient to offset the ease of selling. It therefore requires, and should have, all the assistance which cost accounting can give. The claim is not made that Differential Costs can reduce the risk of decisions to nil. They cannot make a certainty of judgment covering a decision in respect of two alternatives. In the first place, the arithmetical result is not always the most important factor, and, secondly, neither Differential Cost Statements in particular nor cost accounting in general has arrived at the stage where it can reduce the elements of these problems to undoubted mathematical certainty. Nevertheless, a studied conclusion arrived at by a close analysis of the costs and economic characteristics of the business will often considerably limit the chances of wrong decisions. It can translate hunches, guesswork and possibly instincts into reasonably logical conclusions.

Factory Manager

Two examples of the manner in which the Factory Manager can be assisted have already been given. Decisions were to be made as to whether existing equipment should be replaced, and whether a machine should supplant manual labour. But there are a number of other directions in which help can be given. There may be variants of the problem. The cost of new plant and also its capacity may be known, but it may be desired to ascertain how much turnover will be necessary to make its purchase an economical proposition. Here again the situation may be further complicated because the increased production may not be saleable at existing rates. But it is not only in the realm of machines that the Factory Manager may be interested. At the present time, there is throughout Australia a pronounced shortage of female labour. In some industries, and at least in some organisations, consideration is being devoted to whether male labour should supplant female labour. The true position can be indicated by the use of a Differential Cost Statement which could take into account not only the relative efficiency between male and female, and not only the respective wage rates, but also the present cost of idle capacity. There may be a variation of this problem. The Factory Manager may not know exactly what percentage of efficiency he can obtain from male labour, but if he can be advised that if the male can reach a certain efficiency figure it is an economical proposition for him to take on males, he may be helped considerably in coming to a final conclusion.

In certain industries all kinds of inducements have been offered to obtain extra labour, and to avoid excessive absenteeism. It is a Differential Cost which is required to show how much idle capacity is causing and how much is being lost through absenteeism.

At present there is being held in Australia an inquiry into a 40-hour

week. Conjecture has already been rife as to what effect it would have upon costs. Obviously it depends upon whether production is increased or decreased. Differential Cost Statements in the form of Profitgraphs can set forth the effect either upon cost or upon the net profit of an organisation of any percentage of increase or decrease in production resulting from the change. This may be vital information in the event of a change being made. It may then be essential to know just what will be its effect upon the individual organisation. The Profitgraph can display these results in such a way that as statistics showing actual production come to hand, the result on net profit is automatically secured. Similarly, the percentage of production increase to keep profits stable can easily be calculated.

The Purchasing Agent

An example of Differential Costs affecting this executive appeared in the N.A.C.A. Bulletin of 15/12/37 (pp. 431-432):

"Coming from all over the world, the oils naturally have to find their price level in a world market. We compete in the market place with all of the European countries and with Mexico and South America, and a shortage quickly makes itself felt in this most sensitive market. One other peculiarity must be noted before we consider how these oils are obtained and the finished products passed on to consumers. While each oil has its own particular use for which it is peculiarly adapted, practically all of the major oils and fats are loosely tied together in the same price curve. This is due to the fact that, in a great number of instances, it is entirely feasible to substitute one for another in the manufacture of any finished product. For instance, cottonseed oil goes mainly into the edible field and coconut oil mainly into the soap kettle. However, coconut oil may be substituted for cottonseed for many edible purposes. The cost of manufacture into edibles is greater using coconuts than if cottonseed were used, so that when things are normal the manufacturer of edibles prefers cottonseed. However, if coconut oil drops in price or if cottonseed rises to the extent of the differential in manufacturing costs, the edible maker immediately begins to buy coconut oil. This, then, either results in halting the price movement and bringing the oil back into its place in the general price structure, or else it affects the prices of the other oils, forcing them up or dragging them down to its level, thus starting a price swing on all oils."

Here purchase prices are interpreted through Differential Costs.

The Distribution Manager

I am interpreting this executive as being in charge of all warehousing and delivery, but not covering the selling activities. He meets a variety of problems and at times must make decisions regarding methods of transport and the different routes involved. Will it pay to send a big consignment by road, rail or ship? Could money be saved by using hired transport instead of their own trucks? From a cost angle, would it pay to buy three 30-cwt. trucks, or one 5-ton truck? The cost of handling small orders has already been referred to.

The Sales Manager

Some of the problems mentioned in connection with the General Manager may be more particularly within the scope of the Sales Manager, as, for example, the effect of a price reduction. Would it pay to reduce the price of a line to get extra turnover, and, if so, how much extra turnover must be secured? Would it pay to discontinue a line altogether? What will be

the net effect of doing so? Would it be wise to put an extra salesman into territory "C," and, if so, how much extra turnover must be procured to break-even?

Will it pay to dump abroad? What extra sales must be obtained to justify the opening a branch depot?

5. The Place of Differential Costs in Cost Accounting

These are the problems with which the cost accountant can assist by the use of these methods. In other lectures I have, from time to time, endeavoured to indicate the responsibility of the accountant to assist management, the dangers he incurs in neglecting the opportunities to do so. Here is a field virtually untouched waiting to be exploited. The obligation is on the cost accountant to do so. There comes a time when every executive or sub-executive in the business can be given some statement which will assist, but, it should be noted, the statement must assist—otherwise it has no right to be prepared.

Before passing to the final consideration of the place of Differential Costs in cost accounting, let me answer criticism of the foregoing which may be urged along two lines.

Firstly, it may be said that what has been done is to take a portion of cost accounting and wrap it up in a different name. I do not mind if this is correct, though I would prefer to describe it as attempting to take some of its wrappings away. The fundamental fact is that statements of this type have not been used in the way they should have been, and the cost accountant has therefore denied to management assistance which he should have given—assistance which management could expect. Our primary concern should be the preparation of this data if it can assist, and possibly this lecture may indicate at least something of its scope and of its methods.

The second criticism cannot be answered so easily. It may be said that this sounds very well in theory, and that it is a simple matter to outline in general terms what should be done. But it may be urged there is altogether an exaggerated over-simplification of the problem. Is it possible in the complex business today, with constantly varying conditions, with frequently changing circumstances, to prepare a Profitgraph, for example, which can do anything more than mislead?

It may be contended, for example, that the assumptions of fixed and variable expense ratios cannot be gauged with sufficient accuracy to allow of accurate results. Furthermore, the results from year to year vary to such a degree that the cost accountant should be extremely wary before committing himself to figures upon which important judgments must be based. It is better, he may say, to supply no figures than to supply misleading ones. Furthermore, there is the overall query, can this sort of thing be done and will it work?

The answer to this criticism lies along several lines. In the first place it must be remembered that cost accounting is comparatively young, and it has therefore little past experience upon which to draw. Furthermore, it is only in its infancy in exploiting these measures, and the old maxim that practice makes perfect is as true in cost accounting as in anything else. As experience is built up, as the statistics of a business grow over a period of years, the problem of predicting behaviour under certain conditions becomes simpler. It is not a question of the fallibility or infallibility of the method, but rather the technique of building up the figures, based upon the facts, and the interpretation of conditions in such a way as to facilitate their translation into figures. It is true that the presentation of Differential Cost Statements is immensely more difficult in some organisations than in others, and to cover certain facts rather than others, but statements of this

kind, with a degree of accuracy that makes them acceptable, have been prepared and are in fact being prepared. It is true that in no case is 100% accuracy being reached, but it is certain that the degree is sufficient to outweigh by far the doubtful advantage of making decisions without any such aid. There is a certain amount of justification in the criticism, but it should be interpreted not as a justification for *laissez-faire,* but as a challenge—a resounding challenge—to the accountancy profession to improve its technique, to reorganise its thinking, to adapt its approach to the demands which management has the right to make on it if it is to continue to progress in usefulness and prestige.

I have referred throughout this lecture to Differential Costs as being part of cost accounting, and to this conclusion I hold. A decision in this regard, however, cannot be made lightly. Obviously it depends upon a definition of Cost Accounting. Some text-books would define the subject in such a way as to indicate that Differential Costs were undoubtedly part of its technique, whilst other text-books would definitely exclude it from the terms of their definition.

I mentioned earlier, also, that Clark in his *Incidence of Overhead Costs* dealt with some phases of Differential Costs and I quoted his definition. It is interesting to note that following upon this definition there appears these words:

"To the General or Financial Accountant, such a conception of cost can hardly fail to appear forced, illusive and unreal. It is not a tool adapted to his uses. But for the problems of economics or of Cost Accounting in the broadest sense it represents one of the fundamental facts. One of the best expressions of the underlying idea was made at a conference on Cost Accounting in these words—'Whenever you exchange commodities or services and as a result have more assets than you would have had if the exchange had not been made, you have realised a profit. This is not a problem in accounting but in business.'" (Page 49.)

On page 166, Clark says:

"As a matter of impersonal, unmoral financial reckoning it would seem that it pays to take off-peak business, if that business is worth anything above the Differential Cost which it occasions to the concern. The question whether this fact furnishes an adequate motive depends mainly on three things. In the first place, it depends on the extent to which concerns know how large or how small their Differential Costs are. *Cost Accounting systems do not show this,* partly because they do not definitely set out to do so, being chiefly governed by other purposes and considerations and partly because this information cannot be furnished even approximately without making departures from the methods characteristic of accounting taken by itself."

On page 175 there appear these words:

"We shall find that costs which are constant with reference to one policy may be variable with reference to another. Let us, then, state this series of problems, indicating what we would need to know in order to work out correct answers. We need not be bashful in calling for information, for our imaginary department of internal statistics and cost analysis is not subject to the limitations that hedge actual cost accountants, and can tell us anything we require to know about the cost of our business. In other words, we are seeking to study the true nature of costs, about which actual cost accounting systems give only an approximation. What is the use of this assumed omniscience, in view of the fact that cost accounting must deal in approximations and somewhat arbitrary allocations of general items? The use is that such a study will shed a

deal of light on the question whether the sort of approximations actually used in cost acocunting are the most appropriate and useful for the purposes for which they are used. . . . Our answers will sometimes be different from those which a regular cost accounting system would produce; indeed, they will be different from those any practicable cost-keeping system could possibly produce. This is done (to reiterate) in order to direct attention to the true nature of the goal at which the approximations of cost accounting ought to be aimed. One's approximate is likely to be a great deal better if it is at least aimed at the thing one really needs to know than if it is aimed at something else. Thus the chief use of this study may be to help us to see whether actual cost accounting systems aim at the things a manager would need to know if he had omniscience at his disposal. If they do not, then increasing accuracy is no improvement."

Clark proceeds to explain later (page 188) that instead of estimating the average rate of output (shall we say "Normal Capacity"?) and finding the cost of that, we should estimate the cost of working overtime, the cost of a shut-down, and of all the intermediate stages. We should then average these costs, weighting them so as to give a fair picture of the probable facts. He clearly is not disposed to sacrifice utility for any conventional form of accounting.

"A company must have an income account and it is foolish to quarrel with the forms which the accountant finds necessary and convenient for this purpose, so long as they do not set up to be more than they are, and are not forced to do duty for other purposes for which they are not adequate. . . . There have been too many absolutes in accounting as in other arts and sciences and an absolute generally means a conception which may be adapted to one purpose, but is arbitrarily used for other purposes which it does not suit." (Page 193.)

In assessing the validity of Clark's contentions we must remember that his work was first published in 1923, and cost accounting has definitely made progress since that time. Whilst literature on the subject can be traced back to the middle of the nineteenth century (isolated literature), at the time of his writing the subject in any modern conception at all was only showing the first signs of life. There were individual instances of the use of standards in conjunction with cost accounting, but standard cost accounting had barely seen the light of day. It is a far cry from the use of standards then and now, though the subject is still in its infancy. What may have been true of the time that Clark wrote may well be untrue today, or at least may require amplification if not alteration. His statement, for example, that cost accounting cannot give the information which Differential Costs will give, is open to two objections. Firstly, the development of cost accounting has indicated that it can embrace and use the Differential Cost Statement as part of its general technique of cost accounting, and, secondly, the best results from Differential Costs, in fact, come from the information which the more orthodox portion of cost accounting only can give.

One of the quotations given indicates also that Clark quarrels with the average cost and thinks that a series of costs should be taken out. The multiple and flexible budgets of today actually do this, and it seems to me that this objection is no longer valid. It is correct, I think, to say that the objection which Clark voiced has been overcome because cost accounting itself has remedied the defects which Clark so ably pointed out.

I contend, therefore, that Differential Cost Statements are part of the wider technique of the cost accountant. It is true there is not universal

recognition of this fact evidenced through practical application, but Differential Costs are part of costing in name, in the use of facts, in the method of approach, and the general technique. Here again the question of definition arises, inasmuch as there is still in certain quarters the thought that cost accounting should be limited to cost finding. But this phase will pass, just as the Historical Cost phase gave birth to a wider conception which embraced Standard Costs as an alternative, and cost accounting generally commenced to recognise the value of the Fixed and later the Flexible Budget.

I must add that in my opinion (and here again I may offend against the general view) there is a great deal to be said for keeping the term "Cost Accounting" for the more systematic forms of cost finding, and using the term "Managerial Cost Accounting" or perhaps "Managerial Accounting" for the wider conception which embraces the various forms of Cost Accounting, Budgetary Control through the use of Flexible Budgets, the interplay and effect of the degree of variability in expense, and lastly, but by no means the least important, Differential Cost Statements.

Despite Clark's criticism, therefore, there is much to be said for the conclusion that Differential Costs are part of the technique of Cost or Managerial Accounting.

In 1937, however, a new contention appeared in a volume entitled *Some Modern Business Problems*, and a chapter therein entitled the "Rationale of Cost Accounting" by R. S. Edwards. In this, the writer lays emphasis upon the increasing value of Statistical Statements and points out that much of what management requires from the cost accountant cannot easily fit into the conventional forms of cost accounting. Here then there appears at first sight to be a reiteration of Clark's viewpoint, and it must be remembered that, because of the advent of the war, cost accounting generally has made little in the way of progress since 1937. The writer was therefore fully acquainted with the more modern developments of the subject. Knowing this, however, he writes:

> "I believe the cost accountants have spent too much effort in trying to arrive at total costs by building up complicated and delicate on-cost structures which depend upon arbitrary assumptions." (Page 294.)

Edwards goes on to explain that in his opinion the cost department's main functions should be along the lines of informing management regarding the minimum at which additional work can be taken. Here again there is the emphasis laid upon the difference in cost due to increased production. After examining the matter further he goes on to say:

> "But in any case if the future of costing lies principally in statistical examination of Marginal Variations, then it may be doubted whether it can be fitted into the framework of double entry bookkeeping." (Page 295.)

and again:

> "Thus most of the cost accountants' data will come forward in the form of statistical statements in the preparation of which little help can be derived from a tied-in double entry system." (Page 296.)

There is an underlying vein of thought in Edwards' article that in future the cost accountant may devote very much more time and attention to statistical statements involving factors best dealt with through Differential Costs. With respect, I cannot agree that some of the aid which cost accounting generally can give (apart from Differential Costs) can be lightly disregarded. I think Edwards himself recognises this, because whilst maintaining cost accountants have spent too much effort in trying

to arrive at total cost by building up complicated and delicate on-cost structures which depend on arbitrary assumptions, he immediately goes on to say:

> "But on the other hand in some industries long period analysis can be helpful to the management and its estimating department." (Page 294.)

And again:

> "It is impossible to make concrete suggestions how the analysis I have attempted, to describe should be applied to individual cases, but I think that for each department the accountant should prepare, and continuously revise, schedules showing the additional cost of additional output. For this purpose, the cost accountant would need to be provided with details relating to market prices of materials; he would require a wealth of analysis concerning the expenditure of the business, and engineering data showing how, for example, the rate of wear and tear of machinery is affected by use. Overtime rates, fatigue studies and so on should be part of his stock in trade." (Page 295.)

Even these statements seem to me to under-emphasise the fact that if Differential Cost Statements are to be prepared with a necessary degree of accuracy, if they are to be used to cover the full range of subjects with which they are capable of dealing (and not the restricted range which is mentioned by Edwards), if they are to be completed speedily to deal with complex situations which may suddenly arise, they must very largely be based upon that information which comes almost solely from the other aspects of cost accounting. The statistical statements largely use the cost statistics which have been built up, and the availability of cost figures obviates much of the guesswork which otherwise would destroy the value of Differential Cost studies. Nothing will kill Differential Costs quicker than inaccurate information, and the information which flows from the more usual forms of cost accounting is the best type of insurance cover.

Van Sickle comes to this conclusion when after his definition he adds:

> "Differential costs represent an advanced stage of cost accounting because of the intricate problems involved. The use and knowledge of the effect of normal burden rates and overhead budgets are pre-requisite to a clear understanding of this classification of cost." (Page 75, *Cost Accounting.*)

If this were the only factor involved, however, there may still be some argument that the cost of cost finding may not be justified. Edwards very rightly, in my opinion, places the emphasis upon the fact "that it is future costs we have to deal with, not past ones." This is the very reason for the value of Budgetary Control, and incidentally the validity of the budget also largely depends upon much of the information which cost accounting can give. Let us increasingly be concerned with the future rather than the past. On the other hand, we cannot entirely ignore the present—indeed it is dangerous to do so—and that is where the value of cost accounting, in its more accepted form, and particularly the use of Standard Costs, is inestimable.

To reach a final conclusion, therefore, it appears likely that the cost or managerial accounting of the future will expand the use of Standard Costs and widen the scope wherein they can be used to advantage, will place increasing importance upon the use of Flexible Budgets, will prosecute within each business the study of the variability of expense, and will proceed to explore the hitherto almost unused potentialities of Differential Costs. Only through such a programme can cost accounting render its true service

to management. But of all these forms the use of Differential Costs may prove to be the most spectacular form of assistance.

(Mr. Scott showed a number of statements and graphs through an epidiascope and some of these are reproduced here. They are meant to be illustrative only.)

FIGURE No. 1

Comparative Cost of Two Machines

	Present Equipment (2 Machines)				
Cost		£600			£2500
Interest	4%		4%		
Insurance, etc.	2⅔%		2⅔%		
Depreciation	33⅓%		33⅓%		
	—— 40% of £600	—£240	—— 40% of £2500		—£1000
Maintenance		£200			100
Power Supplies, etc.		300			200
Cost of Space		200			150
Material		1500			1500
Labour Cost					
2 × 2400 × 4/-		960	1 × 2100 × 2/-		210
Indirect Labour		200			200
	——	3360			
		£3600			£3360

∴ Saving is £3600 less £3360 = £240

$$\text{Percentage} = \frac{240}{2500 - 600} = 12{\cdot}63\%$$

FIGURE No. 2

Differential Costs of Large and Small Purchases

The cost of carrying stocks is—

Storage Facilities	·25%
Insurance	·25%
Additional Handling	1·50%
Depreciation	2·50%
Interest	5·00%
Obsolescence and Depreciation	5·50%
	15%

If average monthly consumption is 500 units and the minimum ordering quantity is 1000 units, it may be found that the price is £2/5/- per unit. The price for 2000 units may be £2/3/6 per unit. Should the Purchasing Agent buy?

The Saving is 2000 units at 1/6 = £150.

The cost of carrying 2000 units for an average of 3 months is:

15% of £2350 for 3 months = £88/2/6.

∴ Gain is £61/17/6 and purchase should be made.

FIGURE No. 3

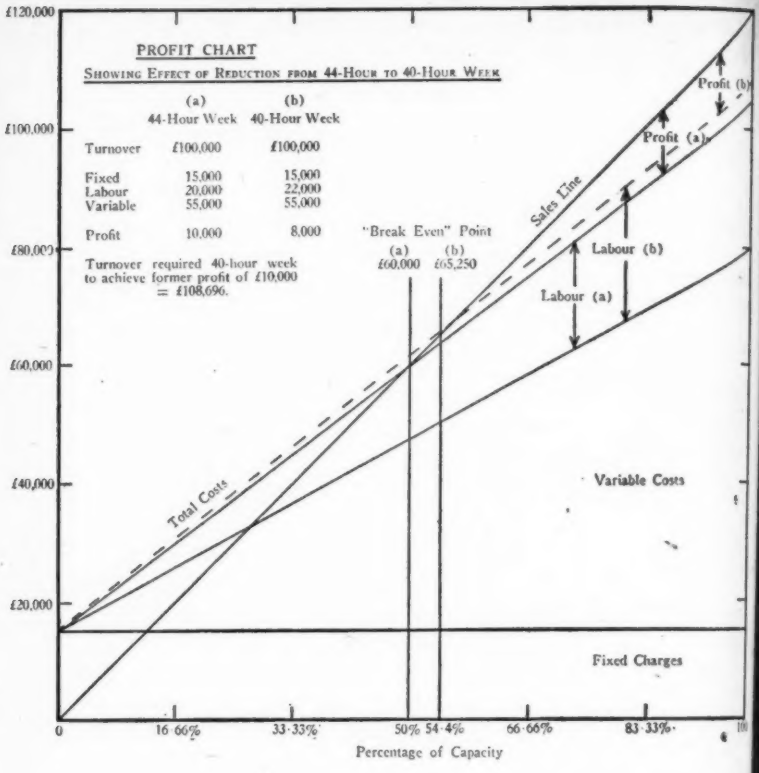

FIGURE No. 4

Differential Cost Studies for Determination of Policy as to Volume, Price, and Taking or Refusing Business at Special Prices

Items Summarised from Detailed Works Sheets.	No. Prod. ready to start.	60% of Capacity.	80% of Capacity.	100% of Capacity.	120% Requiring Additional Facilities.
Fixed Costs:					
Deprecn. (time basis)	3,750	3,750	3,750	3,750	7,000
Insur., Taxes, etc.	3,750	3,750	3,750	3,750	7,000
General Management	5,000	5,000	5,000	5,000	5,000
Sales Management	3,750	3,750	3,750	3,750	4,500
Factory Management	3,750	3,750	3,750	3,750	4,500
W'house Management	2,500	2,500	2,500	2,500	3,000
	22,500	22,500	22,500	22,500	31,000

Variable Costs:					
Material		1,500	2,000	2,500	3,000
Labour		1,500	2,000	2,500	3,000
Var. Factory direct costs		2,250	3,000	3,750	4,500
Var. W'house direct cost		450	600	750	900
Var. Sales direct cost		750	1,000	1,250	1,500
Var. Mgmt. direct costs		300	400	500	600
		6,750	9,000	11,250	13,500
TOTAL COSTS:					
Fixed plus Variable	22,500	29,250	31,500	33,750	44,500
Interest on Investment (add if pertinent).					
Additional Units Produced		600	200	200	200
Differential Cost of Added Units		£11/5/–	£11/5/–	£11/5/–	£53/15/–
Total Units Prod.		600	800	1,000	1,200
Average Cost per Unit		£48/15/–	£39/5/–	£33/15/–	£37/1/9
Weighted Average of Costs per Unit at each point		£48/15/–	£46/8/–	£43/17/6	£42/15/–

FIGURE No. 5

Effects of Various Changes on Profits

These exhibits are designed to show the type of everyday information about costs the management asks for and many times cannot get from its cost systems. A clear segregation of variable and fixed costs is a prerequisite.

An everyday business problem is how the situation would be affected by:

(a) Change in volume.
(b) Change in selling price.
(c) Change in direct costs of production.
(d) Change in fixed costs.
(e) A combination of changes.

The cost system must provide the data for computation of these "alternative costs." If it does not, it has not performed its full function.

Knowing the marginal income (difference between gross income and constantly variable cost), what is the effect of—

(a) Increase or decrease in volume (assume variable cost 3/7½)

	Base	Increase 25%	Increase 50%	Decrease 25%
Sales	£100,000	£125,000	£150,000	£75,000
Variable Cost	72,000	90,000	108,000	54,000
	28,000	35,000	42,000	21,000
Fixed Cost	21,000	21,000	21,000	21,000
Profit	7,000	14,000	21,000	0

Knowing the marginal income (difference between gross income and constantly variable cost), what is the reason—

(a-1) A competitor with a heavier proportion of fixed cost may have a different view of desirability of more or less volume? Assume his variable cost is 3/- instead of 3/7½.

	Base	Increase 25%	Increase 50%	Decrease 25%
Sales	£100,000	£125,000	£150,000	£75,000
Variable Cost	60,000	75,000	90,000	45,000
	40,000	50,000	60,000	30,000
Fixed Cost	33,000	33,000	33,000	33,000
Profit	7,000	17,000	27,000	(L) 3,000

Note: Greater fixed costs make question of "what volume is minimum" more vital.

Knowing the marginal income (difference between gross income and constantly variable cost), what is the effect of—

(b) Increase or decrease in the sales price?

	Base	10%+	10%−
Sales	£100,000	£110,000	£90,000
Variable Cost	72,000	72,000	72,000
	28,000	38,000	18,000
Fixed Cost	21,000	21,000	21,000
Profit	7,000	17,000	(L) 3,000

Knowing the marginal income (difference between gross income and constantly variable cost), what is the effect of—

(c) Increase or decrease in variable cost?

	Base Variable Cost	−5% Variable Cost	+5% Variable Cost
Sales	£100,000	£100,000	£100,000
Variable Cost	72,000	68,500	75,500
	28,000	31,500	24,500
Fixed Cost	21,000	21,000	21,000
Profit	7,000	10,500	3,500

Knowing the marginal income (difference between gross income and constantly variable cost), what is the effect of—

(d) Increase or decrease in fixed cost?

	Base	−5%	+5%
Sales	£100,000	£100,000	£100,000
Variable Cost	72,000	72,000	72,000
	28,000	28,000	28,000
Fixed Cost	21,000	20,000	22,000
Profit	7,000	8,000	6,000

(e) Assuming it is desired to increase profit 100%, this table shows how it might be obtained by concentration on each one of the four factors affecting profit singly.

	Base	Volume V + 25%	Price P + 7%	Var. Cost V − 10%	Fixed Cost F.E. − 33⅓%
Sales	£100,000	£125,000	£107,000	£100,000	£100,000
Var. Cost . .	72,000	90,000	72,000	65,000	72,000
	28,000	35,000	35,000	35,000	28,000
Fixed Cost . .	21,000	21,000	21,000	21,000	14,000
Profit	7,000	14,000	14,000	14,000	14,000

(f) As a practical matter some adjustment might be made in all four factors. Let us suppose:

1. Volume of £5 M eliminated on line sold 10% below variable cost.
2. Volume of £25 M affected by a price increase of 10%.
3. Variable costs of all lines now to be sold reduced 5%.
4. Fixed costs reduced £750.

Figure No. 6

Possible Errors in Applying Distribution Costs

This exhibit is designed to show the possibility of error in making decisions—

1. Where cost accounting methods are not applied to distribution costs.
2. When the cost system fails to reveal the "differential" cost of the line, or, in other words, fails to reveal the "fixed cost" that is included in the cost of the product but which will not cease even if the product is discontinued.

Application of Differential Costs to Study of Profit by Lines of Product or Class of Accounts.

A. Computed with distribution costs allocated as a percentage on the pound of sales.

Line	Volume £	Gross £	Distribution Cost £	Net £
A	3,750	1,500	375	1,125
B	2,500	750	250	500
C	18,750	2,750	1,875	875

B. Computed with distribution costs allocated by cost accounting methods —order filling costs per order—clerical costs per order—selling costs per order or customer—etc.

Line	Volume £	Gross £	Distribution Cost £	Net £
A	3,750	1,500	875	625
B	2,500	750	875	125 Loss
C	18,750	2,750	750	2,000

Schedule A shows discontinuance of line B would result in foregoing a profit of £500 net.

Schedule B shows discontinuance of line B would result in the elimination of a loss of £125.

Either conclusion is in error.

To determine true effect on the business of eliminating line B, it is essential to consider the differential cost of the line and its contribution to fixed costs.

C.

Line	Volume	Direct Costs Manufacturing	Direct Costs Distrib.	Marginal Income
	£	£	£	£
A	3,750	2,000	875	875
B	2,500	1,000	875	625
C	18,750	12,000	750	6,000
				7,500
Less Fixed Costs				5,000
Net Profit				2,500

If line B is discontinued:—

	A	B	Total
Sales	£3,750	£18,750	£22,500
Variable Costs	2,875	12,750	15,625
			£6,875
Fixed Costs			5,000
Net Profit			£1,875

Loss due to eliminating line B.

Note: Instead of spreading Fixed Cost on the basis evidently used:—

	A	B	C
1. Marginal Income	£875	£625	£6,000
Fixed Cost Allocation	250	750	4,000
Net	G £625	L— £125	G £2,000

It could be figured that C, the basic product, should stand all fixed costs:—

	A	B	C
2. Marginal Income	£875	£625	£6,000
Fixed Cost Allocation	—	—	5,000
Net	£875	£625	£1,000

or that any recovery above direct cost on A and B should go to reduce fixed cost charge against C:—

	A	B	C
3. Marginal Income	£875	£625	£6,000
Fixed Cost Allocation	875	625	3,500
	0	0	£2,500

From the cost viewpoint, if discontinuance of line B does not reduce fixed costs, it can be sold profitably for anything above the differential cost of producing it.

Students' Section

Edited by O. R. MacDonald, A.I.C.A.

BRANCH ACCOUNTS

By P. Hosking, F.I.C.A.

(Summary of a lecture to the Commonwealth Accountants' Students' Society (Victorian Division) on 19th March, 1947.)

Basis and Objects of a System of Branch Accounts. The basis of the accounting in Branch Accounts is actually an extension of Departmental Accounts and an application of the principles of Control Accounts. The objects are the isolation of the profits of the Branch from the profits of the business as a whole, and the effecting of a method of stock control.

Head Office Instructions. The instructions to the branch managers and accountants are usually very definite. From a bookkeeping point of view Head Office instructions should be positive and final. Changing conditions must be cared for, but at all stages the Head Office accountant must have complete control of the whole system. The instructions will vary with the size and nature of the Branch, and the powers given to it as to local buying, paying its own expenses, etc. The instructions will prescribe the nature of books and records to be kept, and the statements to be furnished monthly, quarterly, or at other intervals.

Bulk Store at Head Office. Sometimes the Head Office is a non-operating concern, all trading operations being conducted by Branches. In such cases the "Bulk Store Stock Account" or the "Bulk Stock Account" can be made a Control Account to provide a means of ascertaining the cost of goods sold, and to show the stock in store at regular periods.

Large Branches. These are commonly self-contained, having their own bookkeeping records and being audited locally. Here the Head Office bookkeeping is limited to a Branch Account. At the end of the accounting period, a single journal entry is made:

Branch	Dr.
To Profit and Loss Account	Cr.
For net profit of the Branch.	

In a statistical book the Branch results can be consolidated with Head Office results to show a combined Revenue Account. Branch and Head Office balance sheets can be amalgamated to give assets and liabilities of the whole concern.

Smaller Branches. With these the bulk of the accounting is done at Head Office. It is with these types of branches that examination problems are principally concerned, and their accounts are considered in the illustrations which follow. Simplicity is the keynote, but sometimes very detailed accounts are maintained.

The Trading Accounts at Head Office. The examples of workings given do not go beyond the ascertainment of gross profit. The incorporation of expenses and resulting net profit does not present any special features and has therefore been disregarded.

Selling and other Expenses at Branches. As already stated, these can be easily incorporated to reduce gross profit to net. Sometimes expense control accounts or collecting accounts are installed. This reduces the volume of the bookkeeping entries. Statistics of the details of the expenditure are maintained elsewhere in the Branch's records.

Three Types of Accounts

There are three common methods of invoicing goods from Head Office to Branches, namely:

(1) At cost.
(2) At selling price.
(3) At cost plus a percentage.

In the examples which follow, three methods of bookkeeping at Head Office are considered by which the facts are recorded under these different conditions. Let us consider a firm having its Head Office in Melbourne. Full details of the accounts of two Branches (Sydney and Adelaide) are recorded at Head Office. We shall examine one quarter's transactions, using each of the three methods.

Case A—Goods Invoiced by Head Office at Cost. The method adopted is simply that of departmental accounts. The account of each Branch is simply a Trading Account for that Branch.

Case B—Goods Invoiced at Sale Price. When goods are invoiced to a Branch at selling price, the method of bookkeeping alters. The Branch Manager values his stock at selling price. Theoretically the excess of opening stock plus goods supplied to the Branch over sales at the Branch should give stock at selling price. Herein lies the check on the Branch Manager. Usually, unless the goods are few in number (e.g., pianos, motor vehicles), there will be some difference between this theoretical figure and the actual stock as shown at the stocktaking, which should be carried out by a representative of Head Office or another Branch. These differences must be written off, and experience will be a guide as to whether they are unreasonably large and call for further enquiry.

In the Head Office books, the current entries must be made at selling price. As goods are invoiced to a Branch, a "Branch Stock Account" is debited and a "Goods Sent to Branches Account" is credited. Sales will be debited to "Debtors" or "Bank" and credited to "Branch Stock Account." At balance date, when stocks have been agreed, and small differences written off, the debit balance on Branch Stock Account will be carried down.

In the "Goods Sent to Branches Account" similar credit balances should be carried down and the remaining credit balances closed off to Sales Account, and thence to General Trading Account. The Branch Stock Account and the goods sent to Branches now have the same balances—one a debit and the other a credit. These cancel each other in the General Balance Sheet. Stocks at the Branches must now be repriced at Head Office—at cost or less—and incorporated in the Head Office books in the usual way.

Case C—Goods Invoiced at Cost plus a Percentage. When goods are invoiced by Head Office to a Branch at a price exceeding cost, the Head Office accountant usually has a Branch Stock Transfer Book to distinguish cost from invoice price. Commonly a fixed percentage is added, which is not necessarily the amount of the gross profit required on cost. In practice the accountant will have all the facts, but, in the examination room, the examinee has to reduce invoice price to cost by arithmetical formula. If we buy at £100 and sell at £150 the percentage of profit on selling price is $\frac{50}{150}$ of 100 = 33⅓ per cent., while the percentage on cost is 50 per cent.

In the examples given, the fixed percentage has been given as 15 per cent. If 15 per cent. is added to cost the percentage on selling price is $\frac{15}{115}$ of 100 that is, 13·04 per cent., and this must come off sales to reduce them to cost.

The Branch will be unaware of the actual percentage added, consequently stocks will be valued at the only known figure—the invoice price.

Branch Transactions

Quarter ended December 31st, 1946.

Case A—Goods Invoiced by Head Office at Cost

	Sydney	Adelaide	Total
	£	£	£
Goods sent to Branches, at cost	4000	3600	7600
Credit sales	2450	2050	4500
Cash sales	2750	2250	5000
Cash received from debtors	2250	1850	4100
Debtors at October 1, 1946	1555	1665	3220
Debtors at December 31, 1946	1755	1865	3620
Stocks, at cost—October 1, 1946	750	650	1400
Stocks, at cost—December 31, 1946	1060	960	2020

Case B—Goods Invoiced by Head Office at Sale Price

	Sydney	Adelaide	Total
	£	£	£
Goods sent to Branches, at sale price	5610	4720	10330
Credit sales	2450	2050	4500
Cash sales	2750	2250	5000
Cash received from debtors	2250	1850	4100
Debtors at October 1, 1946	1555	1665	3220
Debtors at December 31, 1946	1755	1865	3620
Stocks, at sale price—October 1, 1946	935	810	1745
Stocks, at sale price—December 31, 1946	1325	1200	2525

Case C—Goods Invoiced by Head Office at Cost plus 15% thereon

	Sydney	Adelaide	Total
	£	£	£
Goods sent to Branches, at cost plus 15%	4600	4140	8740
Credit sales	2450	2050	4500
Cash sales	2750	2250	5000
Cash received from debtors	2250	1850	4100
Debtors at October 1, 1946	1555	1665	3220
Debtors at December 31, 1946	1755	1865	3620
Stocks, at cost plus 15%—			
At October 1, 1946	862	748	1610
At December 31, 1946	1219	1104	2323

Case A—Cost Price

Accounts in Head Office Ledger

BRANCH ACCOUNTS

	Syd.	Adel.	Total		Syd.	Adel.	Total
	£	£	£		£	£	£
Balance Oct. 1—				Cash Sales—			
Stocks	750	650	1400	Qtr.	2750	2250	5000
Debtors	1555	1665	3220	Cash from debtors—			
	2305	2315	4620	Qtr.	2250	1850	4100
Goods to Brs. for Quarter	4000	3600	7600	Balance, Dec. 31	2815	2825	5640
Gross Profit to Genl. P. and L. Account	1510	1010	2520				
	7815	6925	14740		7815	6925	14740
Balance Jan. 1—							
Stocks	1060	960	2020				
Debtors	1755	1865	3620				
	2815	2825	5640				

GOODS SENT TO BRANCHES

	Syd. £	Adel. £	Total £		Syd. £	Adel. £	Total £
Genl. Trading A/c., Dec. 31	4000	3600	7600	Branch Accounts (Qtr.)	4000	3600	7600

GENERAL TRADING ACCOUNT

	£		£
Purchases (say)	12600	Goods to Branches	7600

GENERAL P. AND L. ACCOUNT

Gross Profit—Sydney	1510
Adelaide	1010
	2520

If it is desired to show the result in regular trading account form, it is simply a matter of separating debtors.

BRANCH ACCOUNTS

	Syd. £	Adel. £	Total £		Syd. £	Adel. £	Total £
Stocks, Oct. 1 .	750	650	1400	Sales—Cash ..	2750	2250	5000
Goods to Brs. .	4000	3600	7600	Sales—Cr. . ..	2450	2050	4500
Gross Profit ..	1510	1010	2520	Stocks, Dec. 31	1060	960	2020
	6260	5260	11520		6260	5260	11520
Stocks, Jan. 1 .	1060	960	2020				

BRANCH DEBTORS

	Syd. £	Adel. £	Total £		Syd. £	Adel. £	Total £
Balance, Oct. 1	1555	1665	3220	Cash—Qtr. . ..	2250	1850	4100
Sales—Qtr. ..	2450	2050	4500	Balance, Dec. 31	1755	1865	3620
	4005	3715	7720		4005	3715	7720
Balance, Jan. 1	1755	1865	3620				

Case B—Sale Price

Accounts in Head Office Ledger

BRANCH STOCKS

	Syd. £	Adel. £	Total £		Syd. £	Adel. £	Total £
Balance, Oct. 1	935	810	1745	Sales (Qtr.)—			
Goods—Qtr. ..	5610	4720	10330	Cash	2750	2250	5000
				Cr.	2450	2050	4500
				Diffces. w/off .	20	30	50
				Balance, Dec. 31	1325	1200	2525
	6545	5530	12075		6545	5530	12075
Balance, Jan. 1	1325	1200	2525				

BRANCH DEBTORS

	Syd. £	Adel. £	Total £		Syd. £	Adel. £	Total £
Balance, Oct. 1	1555	1665	3220	Cash—Qtr. ..	2250	1850	4100
Sales—Qtr. ..	2450	2050	4500	Balance, Dec. 31	1755	1865	3620
	4005	3715	7720		4005	3715	7720
Balance, Jan. 1	1755	1865	3620				

GOODS SENT TO BRANCHES

	Syd. £	Adel. £	Total £		Syd. £	Adel. £	Total £
Diffces. w/off .	20	30	50	Balance, Oct. 1	935	810	1745
Balance, Dec. 31	1325	1200	2525	Branch Stocks .	5610	4720	10330
Sales Account .	5200	4300	9500				
	6545	5530	12075		6545	5530	12075
				Balance, Jan. 1	1325	1200	2525

At Head Office, stocks at December 31 will be brought into the accounts at cost, by the usual journal entry:

Stocks on Hand .. .. Dr. £2020
General Trading Account .. Cr. £2020

Sydney, £1060; Adelaide, £960—
at cost, at December 31, 1946.

The compensating balances—Branch Stocks, £2525, and Goods Sent to Branches, £2525—will be omitted from the Head Office balance sheet.

A detailed General Trading Account would appear thus:

	H.O. £	Syd. £	Adel. £	Total £		H.O. £	Syd. £	Adel. £	Total £
Stocks . ..	2000	750	650	3400	Sales	7000	5200	4300	16500
Purchases .	5000	4000	3600	12600	Stocks . ..	2000	1060	960	4020
Gross profit	2000	1510	1010	4520					
	9000	6260	5260	20520		9000	6260	5260	20520

Head Office Purchases Account would be analysed for quarter.

Case C—Cost Plus 15%

Accounts in Head Office Ledger

If 15% is added to cost, 3/23rds or 13·04% must come off invoice price to reduce to cost.)

BRANCH ACCOUNTS

	Syd. £	Adel. £	Total £		Syd. £	Adel. £	Total £
alance, Oct. 1—				Cash Sales . ..	2750	2250	5000
Debtors . ..	1555	1665	3220	Cash from			
Stocks	862	748	1610	Debtors . ..	2250	1850	4100
	2417	2413	4830	Balance, Dec. 31	2974	2969	5943
oods—Qtr. ..	4600	4140	8740				
xpense A/c .	957	516	1473				
	7974	7069	15043		7974	7069	15043
alance, Jan. 1—							
Debtors . ..	1755	1865	3620				
Stocks	1219	1104	2323				
	2974	2969	5943				

GOODS SENT TO BRANCHES

	Syd. £	Adel. £	Total £		Syd. £	Adel. £	Total £
xpense Ac-				Branch			
ount (15%)	600	540	1140	Accounts . ..	4600	4140	8740
ading Account	4000	3600	7600				
	4600	4140	8740		4600	4140	8740

BRANCH STOCK SUSPENSE

	Syd. £	Adel. £	Total £		Syd. £	Adel. £	Total £
Balance, Dec. 31	159	144	303	Balance, Oct. 1	112	98	210
Gross Profit to Gen. P. & L. Account . .	1510	1010	2520	Goods to Branches . . .	600	540	1140
				Branch Accounts . . .	957	516	1473
	1669	1154	2823		1669	1154	2823
				Balance, Jan. 1	159	144	303

GENERAL TRADING ACCOUNT

	£		£
Purchases (say)	12600	Goods to Branches	7600

GENERAL PROFIT AND LOSS ACCOUNT

Gross Profit—Sydney	1510
Adelaide	1010
	2520

In the balance sheet, stocks will appear at £2020—i.e., £2323 (Branch Accounts) less £303 (Stock Suspense Accounts).

STATISTICAL TRADING ACCOUNT AT HEAD OFFICE

	Syd. £	Adel. £	Total £		Syd. £	Adel. £	Total £
Stocks, Oct. 1 .	750	650	1400	Sales—Cash and Credit . . .	5200	4300	9500
Goods from Head Office .	4000	3600	7600	Stocks, Dec. 31	1060	960	2020
Gross Profit . .	1510	1010	2520				
	6260	5260	11520		6260	5260	11520

ITEMS IN TRANSIT AT END OF ACCOUNTING PERIOD

These are best adjusted in Head Office books. Cash or stock in trade may be in transit between Branches or between a Branch and Head Office.

CASH

If a Branch had remitted cash to Head Office on December 31, the credit may not appear in Head Office bank statement until early in January. Two courses are open at Head Office—

Either

(a) Enter the remittance in the receipts cash book at December 31 the Branch concerned, and include among "outstandings" in the bank reconciliation statement.

or

(b) Make a journal entry thus—

Cash in Transit	Dr.
Branch Account	Cr.

The remittance will be entered in the cash book in January, when received.

If cash had been supplied to a Branch by Head Office in similar circumstances, journal entry (b) above would meet the case.

Cash in Transit will appear among the assets.

STOCK

If Head Office had despatched stock to a Branch towards the end of December, and the goods had not arrived at the branch until January, two accounting methods are available at Head Office—

Either

(a) A journal entry—

Stock in Transit	Dr.
Branch Account	Cr.

This entails no alteration of stock inventories at Head Office or Branch. Stock in Transit would appear among the assets;

or

(b) A journal entry—

Goods sent to Branches	Dr.
Branch Account	Cr.

This would cancel the original entry. Head Office would then have to include the goods in its own stock sheets at December 31.

All December journal entries, as above, would be reversed in January.

Foreign Branches

When the rate of exchange fluctuates considerably, it is usual to convert the foreign trial balance to the domestic currency on some such lines as the following:

(a) Fixed assets at the same rate as on the previous balance date;
(b) Current assets and liabilities at the rate on the day of the present balance sheet;
(c) Nominal accounts (revenue items) at the average rate for the accounting period;
(d) Remittances at the actual rate of each.

Depreciation, although falling under (c) above, is generally calculated on the actual home value of the asset concerned.

Head Office Account is, of course, already converted.

Losses or gains on foreign exchange are commonly debited or credited to Profit and Loss Account. Sometimes gains are credited to a "Provision for Exchange Fluctuations," and portion of losses charged thereto in years of abnormally unfavourable fluctuations.

Problem

The New York branch of a firm sends the following interim trial balance to its Head Office in Melbourne.

DECEMBER 31, 1946

Dr.	$	*Cr.*	$
Remittances	5000	Head Office	20000
Bank	4260	Creditors	1000
Debtors	7500	Sales	28500
Machines	1850	Discount	240
Stock: January 1, 1946	4550	Commission	120
Purchases	16200		
Expenses	4500		
Bills Receivable	6000		
	49860		49860

Stock in trade at New York on December 31, 1946, was $1800. The branch was instructed to depreciate machines 10%. Prepare a Profit and Loss Account, and close off net profit to Head Office Account.

Exchange rates were:

January 1, 1946	$3½ to	£1 (Aust.)
Average for 1946	$3 to	£1 (Aust.)
December 31, 1946	$4 to	£1 (Aust.)

(Actually, of course, exchange rates are now much less favourable to Australia, but it has not been thought necessary to alter the workings of a problem prepared some years ago.)

At Melbourne the following balances are in the Head Office ledger and they have been reconciled with the Branch:

New York Branch	£5100
Remittances	£1500
Machines	£600

Show (1) Profit and Loss Account and Head Office Account at New York.
(2) Profit and Loss Account and Branch Account at Head Office.
(3) Components of Head Office Account and Branch Account.

Foreign Branches—Solution of Problem

TRIAL BALANCE CONVERTED TO £ (AUST.)—DECEMBER 31, 1946

Account	Rate	Dr. $	Cr. $	Dr. £	Cr. £
Head Office	As before		20000		5100
Creditors	4		1000		250
Sales	3		28500		9500
Discount	3		240		80
Commission	3		120		40
Remittances	Actual	5000		1500	
Bank	4	4260		1065	
Debtors	4	7500		1875	
Machines	As before	1665		540	
Stock: January 1, 1946	3½	4550		1300	
Purchases	3	16200		5400	
Expenses	3	4500		1500	
Depreciation	As before	185		60	
Bills Receivable	4	6000		1500	
Loss on Exchange	—	—		230	
		49860	49860	14970	14970

Depreciation: 10% of $1850—$185; 10% of £600—£60.
Stock: December 31, 1946—$4800 converted at $4 to £1 (Aust.).

PROFIT AND LOSS ACCOUNT—YEAR 1946—IN NEW YORK LEDGER

	$		$
Stock: January 1, 1946	4550	Sales	28500
Purchases	16200	Discount	240
Expenses	4500	Commission	120
Depreciation	185	Stock: December 31, 1946	4800
Net Profit, to H.O. Account	8225		
	33660		33660

HEAD OFFICE ACCOUNT—IN NEW YORK LEDGER

	$		$
Remittances	5000	Balance: January 1, 1946	20000
Balance: December 31, 1946	23225	Net Profit, from P. & L. A/c	8225
	28225		28225
		Balance: January 1, 1947	23225

BRANCH PROFIT AND LOSS ACCOUNT—YEAR 1946—AT HEAD OFFICE

	£		£
Stock: January 1, 1946	1300	Sales	9500
Purchases	5400	Discount	80
Expenses	1500	Commission	40
Depreciation	60	Stock: December 31, 1946	1200
Loss on Exchange	230		
Net Profit	2330		
	10820		10820

NEW YORK BRANCH ACCOUNT—IN HEAD OFFICE LEDGER

	£		£
Balance: January 1, 1946	5100	Remittances	1500
Net Profit	2330	Balance: December 31, 1946	5930
	7430		7430
Balance: January 1, 1947	5930		

Composition of Head Office Account and Branch Account

HEAD OFFICE ACCOUNT AT NEW YORK

	$
Bank	4260
Debtors	7500
Machines	1665
Stock in Trade	4800
Bills Receivable	6000
	24225
Deduct—Creditors	1000
	23225

NEW YORK BRANCH ACCOUNT AT HEAD OFFICE

	£
Bank	1065
Debtors	1875
Machines	540
Stock in Trade	1200
Bills Receivable	1500
	6180
Deduct—Creditors	250
	5930

PRINCIPAL AND AGENT

By J. H. TROTTER, LL.B., A.I.C.A.

An agent is a person having express or implied authority to represent or act on behalf of another person, who is called his principal, in such manner as to affect the principal's rights and duties in relation to third parties.

The relationship of agency, except in the special case of agency of necessity (see later), can exist only by virtue of express or implied authority given by the principal to the agent, and express or implied assent by the agent. The authority, whether given by writing or words or implied from conduct, is the basis of the agency and determines its extent. The relations of the principal and agent, between themselves, are based on the employment of the agent by the principal, who must pay the agent any reward or commission which is agreed upon between them. An agent may, however, act gratuitously.

Agency Distinguished from Other Relationships

The relationship of agency should be distinguished from the relationship of master and servant and the relationship of an independent contractor and the person with whom he contracts.

A servant is distinguished from an independent contractor by the fact that, in the former case, the master controls the manner in which the servant does his work, while the independent contractor may be subject to control as to the work which he does, but not as to the manner in which

he does it. In this respect, the independent contractor exercises his own discretion.

A servant or an independent contractor may or may not have authority as agents. The essence of agency is the authority to affect the rights and duties of the employer in relation to third parties. If the agent or independent contractor is clothed with such authority, either expressly or by implication, then within the scope of that authority the servant or independent contractor is also an agent. The authority will be readily implied in certain classes of employment, e.g., manager, salesman, shop-assistant.

Capacity to Act as Principal or Agent

Capacity to contract or do any other act by means of an agent is co-extensive with the capacity of the principal to make that contract or do that act. In other words, what a person can do himself he can do through an agent, but he cannot do through an agent any act in relation to which he is himself under a disability. Thus an infant is bound by a contract made by his agent with his authority, if he would have been bound if he made the contract himself, but he is not bound if he could not have made a binding contract himself. So a company is bound by the act of its agents under its authority within the scope of its Memorandum of Association, but it is not bound by acts outside the scope of its Memorandum.

All persons of sound mind are competent to act as agents even if their own capacity is limited, or they would have no capacity to contract or act in the matter on their own behalf. The personal liability of the agent is, however, limited by his own capacity to contract. Thus an infant, if of sound mind, is a competent agent for the purpose of bringing two other persons into legal relations with one another, but he will not be liable on any contract with his principal or on any contract entered into by him with third persons, unless the making of the contract would have been within his own capacity.

Classes of Agents

1. Special Agents.—A special agent is one who has authority to do only some particular act, or represent his principal in some particular transaction, such act or transaction not being in the ordinary course of his trade, profession or business as an agent. The distinction between special and general agents is of importance, principally, in determining the nature and extent of the agent's authority. Acts and transactions in the ordinary course of business as an agent are excepted from the above definitions, since in the case of such acts and transactions there is an implied authority of a general rather than a special nature. If I am going away for a few weeks and instruct my gardener merely to sell my horse, he is a special agent and has no authority to warrant it sound, but if I give my horse to a horse dealer to sell, his authority is general and he may warrant it sound. A special agent's authority is limited to the bare act or transaction authorised. The normal commercial agency is not of this nature, since the agent is generally acting in the ordinary course of his business as an agent or is a servant of the principal like a manager or salesman or buyer with some general authority. However, special agencies are not uncommon in commerce.

2. General Agents.—A general agent is one who has authority

   (a) to act for his principal in all matters in respect of a particular business or all matters or transactions of a particular kind or within a particular sphere of operations—thus managers, partners, salesmen are general agents;

(b) to do some act in the ordinary course of his trade, profession or business as an agent—thus solicitors or brokers, employed as such, are general agents.

The distinction between a general agent and special agent is this: The special agent is limited to his special authority and cannot bind his principal outside the scope of that authority. The general agent has authority to do anything incidental to the ordinary conduct of the particular business or class of transactions or sphere of operations to which the agency relates, or if he is authorised to do any act in the course of his profession, trade or business as agent, he has implied authority to do whatever is usually incidental, in the ordinary course of such profession, trade or business, to the execution of his express authority.

Thus a person appointed to manage a business has implied authority to do all acts necessary or incidental to the ordinary conduct of that business. So the manager of a manufacturing company would have authority to order raw materials necessary for manufacture, and, if he also manages the merchandising side, he would have implied authority to enter into contracts, in the ordinary course of business, for the sale of the products of manufacture.

3. Universal Agents.—The authority of general and special agents is not unlimited. The one is limited by his special authority, the other by the ordinary scope of his duties. On the other hand, the authority of a universal agent is unlimited. Such agents are appointed to act for the principal in all matters, to do all acts which one is capable of doing for another. Such agencies are rare in commercial practice, but are sometimes created when the principal is to be absent for a considerable time abroad and in similar circumstances.

Formation of the Agency Relationship

The relationship of principal and agent may arise—

1. Expressly
   - (a) By Deed,
   - (b) By Writing,
   - (c) By Word of Mouth.
2. Impliedly—By Holding Out.
3. By Necessity.
4. Retrospectively, by Ratification.

These four methods are not mutually exclusive; thus the agency may be partly written and partly verbal, or partly express and partly implied.

1. *Expressly*

(a) By Deed.—The appointment of an agent by deed is necessary in the following cases:

(i) Where the agent is authorised to execute a deed on behalf of his principal—the appointment is in this case called a "power of attorney."

(ii) The appointment of an agent by a corporation, other than a trading corporation or company under the Companies Act, is generally required to be under seal.

(b) By Writing.—Writing is required in the following cases:

(i) A contract for the sale of land or any interest therein is unenforceable unless evidenced in writing signed by the party to be charged or his agent *authorised in writing.*

(ii) An appointment of an agent by an agreement not to be performed within the space of one year is unenforceable unless evidenced in writing (Statute of Frauds).

(iii) Various other statutory provisions require the appointments of agents for certain purposes to be in writing.

(c) By Word of Mouth.—The conferring of authority by the principal may be verbal.

2. *Impliedly—Holding Out*

Where one, by words or conduct, "holds out" another as his agent, then, as between the former person and third persons, that former person will not be permitted to deny the agency. Thus where A, either by his conduct or words, leads others to believe that B is his agent, then A will not be permitted to deny the authority of B so to act if some third person enters into an agreement with B on the assumption that he, B, is the agent of A. This is sometimes called agency by estoppel.

Estoppel.—Estoppel is a rule of evidence and may be stated as follows: Where one person by his words or conduct causes another to believe the existence of a certain state of things, whereby that other is induced to act on that belief so as to alter his own previous position, the former is not permitted to aver against the latter that that state of things did not exist.

An estoppel consists of—

(i) a representation;

(ii) an intention of the other party to act on it; and

(iii) action by the other party on the faith of the representation whereby his position is altered.

The rule in its application to agency is stated by Bowstead on "Agency" as follows:

"Where any person, by words or conduct, represents or permits it to be represented that another person has authority to act on his behalf, he is bound by the acts of such other person with respect to anyone dealing with him as an agent on the faith of such representation, to the same extent as if such other person had the authority which he was represented to have."

A common example of agency by estoppel or holding out is the agency of a wife for her husband in relation to the necessities of the family and household. Apart from agency of necessity, which we will discuss later, the existence and nature of the agency is based on the ordinary rules governing principal and agent. Thus, the agency may be created expressly or it may be created by implication. The implication, for example, would normally arise where a matrimonial home is set up and the wife, apparently with the husband's consent, proceeds to manage the domestic affairs of the household. The wife is, in this respect, in no different position from an ordinary servant. Further, in conformity with the general rules of agency, mere notice in the press will not determine the authority of the wife, unless the person dealing with the wife be proved to have had notice of the termination.

The following is a further example of agency by estoppel:

A allowed a broker to purchase a quantity of hemp for him and instructed him to enter it in a place of deposit, in his own name. He gave no authority to the broker to sell it, but the broker did sell it. It was held the sale was a valid sale. The court was not concerned with private limitation of the apparent authority given by leaving control of the goods with the broker. There are now statutory provisions in relation to the

implied authority of Mercantile Agents who retain the possession of goods. We shall deal with these provisions later under Sale of Goods.

The following are further examples:

A and B permitted their names to appear on a programme as the organisers of a fete, C's name appearing thereon as the general manager. A and B took an active part in the conduct of the fete. It was held that they were liable on orders given by C for tents.

A had for some years managed a shop belonging to B and had ordered goods in B's name from C, and B had duly paid for them. A absconded, but later called on C and bought some goods in B's name. C had no notice of the termination of the agency. It was held that B was liable for the price of the goods.

Scope of Agent's Authority—Estoppel. Assuming the fact of agency, the actual scope of the agency may often depend on the doctrine of estoppel. Thus, where a general agent is appointed by express words or writing, his appointment will generally take the form of an appointment to a particular position, such as manager of a business, or as instructions to act in relation to transactions of a particular kind, or as instructions to act, in his business as an agent, in relation to a particular transaction. The scope of the agent's authority will, in this case, be implied by law. (See discussion of General and Special Agents earlier.)

Thus the law implies that partners are the general agents of the partnership in relation to the carrying on of the partnership business, so that the acts of any one partner within the scope of that authority bind the others.

Nor can the principal, in such cases, limit the authority of his agent by private communications passing between them, for every act done by an agent in the course of his employment and within the *apparent scope of his authority* binds the principal unless the agent lacks authority for the act and the person dealing with him has notice of the fact. This doctrine of apparent authority is of the greatest importance in the law of agency.

3. *Agency of Necessity*

In certain circumstances, the law confers on one person authority to act as the agent of another, without requiring that other's assent.

1. If a husband makes no adequate provision for his wife's maintenance, she is entitled to supply the needs of herself and her children on his credit, unless she has left her husband unjustifiably. This does not rest on agency in the ordinary sense and continues even if the tradesman is warned that the wife has no authority.

2. An authority of necessity is conferred by law in certain cases where a person has control of the property of another, and, because of an emergency which places the property in imminent jeopardy, it becomes necessary in order to preserve the property of the principal to act before the authority of that other can be obtained. Thus a master of a ship may be compelled to pledge his employer's credit in order to effect essential repairs, to preserve the ship, or he may hurriedly sell damaged cargo which through further delay may become ruined. The same sort of agency arises in certain circumstances in relation to goods in the hands of a carrier, and it has been held that goods wrongly exported to a consignee may be sold by him in the interests of the consignor. Apart from these cases the limits of the doctrine are not very clear. It is doubtful whether it will be extended beyond the cases referred to above.

(To be continued.)

Book Review

Administrative Control, by Kenneth J. Wharton. Gee & Co. (Publishers) Ltd., London. (Law Book Co. of Australasia Pty Ltd.)

The theme of this work is indicative of the growing realisation that the office is not only a unit in commercial and industrial organisation, but comprises of itself a functional group to be scientifically planned and controlled. In his treatment the author lays emphasis on principles rather than upon methods in a worthy endeavour to encompass the wide variation of size and circumstance affecting the organisation of accounting and other clerical operations. He exemplifies by text and diagram the alternative development of Line and Functional Charts of personnel authority and responsibility and makes an important point of the fact that clerical operations physically external to the accounting or secretarial department should be brought within the scope of the general plan. "It frequently happens," he reminds us, "that the number of clerical workers in the technical and sales offices is considerable and should not be overlooked when the office staff is under review." In this connection the author refers to the need for a "Control" department to apply progressively a critical examination to staff and methods and to conduct research into systems, equipment and operations. Such a department would be enabled to approach its task with the benefit of a perspective not attainable from within the busy and exacting routine of the accountant's daily duties. It would be available for special investigations relating to new conditions of trading, for staff selection and training, the preparation of manuals of procedure and for ensuring that office work is performed as planned.

Many useful illustrations are provided as model charts of standard procedure. By a detailed and orderly record of clerical operations these forms reveal the "dovetailing" of duties and functions or, alternatively, expose cases of overlapping or duplication. In this way the author links with his enunciation of basic theory an essentially practical application of the principles outlined. There is a suggestion of carrying definition too far when the author instances the limitations of the office boy's responsibilities. "In the case of the Technical Manager's office," he warns, "it is to be noted that the office boy would take instruction from the production statistics clerk, and it would be satisfactory from the point of view of the boy that he need not obey the instruction of all and sundry. That is as it should be." This would seem to give the lad many opportunities for asserting himself with authority in matters affecting the Technical Manager's ink well or the purchase of the typiste's lunch.

There is also something rather naively provocative in a reference to the selection of executive and administrative officers; to quote: "Normally, the selection of the individuals to fill these appointments (*I refer to the offices other than the Board of Directors*) depend upon two principal considerations, namely: Competence in the technique of the function and Administrative ability." (The italics are ours.)

V. L. SOLOMON.